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ORIGINAL LECTURES.

CLINICAL LECTURE

ON A CASE OF PROGRESSIVE MUSCULAR SCLEROSIS (PSEUDO-HYPERTROPHIC MUSCULAR PARALYSIS OF DUCHENNE).

Delivered May 13, 1871,

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W. E., æt. 20, was admitted to the Philadelphia Hospital, April 19, 1871. He was born in Virginia, and has resided there or in the District of Columbia until the present time. His parents are both dead,—his father from cholera, his mother from some unknown cause. He had two sisters and a brother, all of whom are dead,—two from unknown causes; but one sister had paralysis (apparently hemiplegia), and was unable to walk for some time before her death. The patient himself was a delicate and weakly child so far back as he can recollect. He never suffered either from malaria or rheumatism. He was engaged in the country on a farm, and his strength was overtasked by heavy lifting. He never, however, met with any injury. Six years ago he began to notice gradually increasing loss of strength in the legs, which progressed so slowly that for eighteen months he was still able to run about, though not so actively as other boys. He was not obliged to use a cane until two years ago, and since then only in walking considerable distances. This gradually increasing debility was attended with no pain, formication, or subjective sense of change of temperature in the legs. There were also no contractions or cramps of the muscles. The progressive debility had not continued long before he noticed that it was necessary, when he was standing or walking, to throw his shoulders back and protrude his abdomen and lower part of the thorax, thus showing that the muscles of the back were affected at a very early date. During this early period he could walk quite naturally, but in running he threw his shoulders far back and stretched his legs widely apart; he assumed the same position also in going up an elevation. Two years later the muscles of the arms became affected in the same way as those of the legs and back. During the first three years he merely noticed that the legs did not grow as they should do, but afterwards atrophy began, first in the muscles of the calves, shortly after in those of the thighs and of the back, and soon afterwards in those of the shoulders and arms. About two years ago, after the atrophy of the muscles of the calves had become very marked, he noticed that they began to increase in size, and this growth has continued until they have acquired a size much greater than they ever had previously. This process of renewed growth next appeared, about one year ago, in the muscles of the forearm, and has continued at a slow rate. During all this time his weakness has steadily increased; he has, however, never been kept in bed by it, but has been able to get about feebly by the aid of a cane. He has never had a sense of constriction about any part of the body. His appetite throughout has been good, his digestion fair, and bowels regular. His urine has always been passed with ease, and has merely been noted to be occasionally yellow. About one year ago he was seized, without any apparent cause, with a severe epileptic convulsion, and since that time he has had similar attacks at intervals of from fifteen to thirty days. He has usually been unable to tell when these fits were coming on, but occasionally he has had a strange feeling in the head, and has thought of foolish things, before the attacks. The fits have been attended with entire unconsciousness, sudden falling to the ground, and muscular convulsion. He has usually been half a day in entirely recovering from them. He has never had more than two convulsions on the same day.

Present condition.—His expression is natural, mind active, and special senses unaffected. The muscles of the face are not involved, and their action is perfect. His tongue is clean and moist, appetite fair, digestion easy, and bowels regular. There is no enlargement of the abdominal viscera. The urine is normal and secreted in normal quantity. His respirations are easy, twelve in the minute, chiefly diaphragmatic: the vesicular murmur is soft and healthy. The cardiac sounds are normal. The pulse is 75, in the recumbent position.

Muscular system.—The muscles of the neck (sterno-cleido-mastoids and extensors of the head) are of fair size, and their movements are strong and free. The trapezii are feeble, and he retracts the shoulders with difficulty and feebly. The pectoral muscles are moderately wasted and feeble. The scapular group of muscles are less wasted, and the scapulæ do not project markedly from the thorax, so that the serrati magni are probably not much wasted and enfeebled. The deltoids are extremely wasted, and he is unable to raise either arm within thirty degrees of the horizontal plane; when the arm is raised, there is a marked depression below the acromion process. The biceps muscles are also extremely wasted, and he is able to flex the forearm only a little beyond a right angle. The triceps muscles are also very feeble, and the long head of each is greatly wasted, while the external and short heads appear as quite prominent fleshy masses.

The forearms seem unduly large in comparison with the atrophied arms, and are in reality larger than they have ever previously been. They have, moreover, a peculiar blunt and swollen appearance, owing to the sudden enlargement of the muscles above the wrists. The atrophy of the forearms seems never to have reached the degree attained elsewhere, so that the degree of consecutive hypertrophy has not been so marked as in the calves. The grasp of the hands is decidedly weaker than would be expected from the size of the forearms, that of the right being much weaker than that of the left hand. There has been no atrophy of the muscles of the hands.

When he sits up in bed, he is only able to hold the shoulders back with effort; there is increased bowing forward of the vertebral column, with absence of the lumbar depression. There is decided wasting of the erector spinæ muscles on either side. When lying in bed, the lumbar spine is raised, so that the obliquity of the pelvis and hypogastric region is increased. The muscles of the abdomen and thorax are not wasted, and preserve good strength.

When he is lying down, the feet are strongly extended and adducted (equino-varus), so that the toes point towards each other, while the soles rest on the bed. There is great prominence of the tarsus. The muscles of the thighs are all much wasted, as are those of the buttocks. It is with difficulty that, when lying down, he can draw up the legs by the action of the flexor muscles. He has much more power of extending them by the quadriceps extensors. The rotators, abductors, and adductors of the thighs are much less affected. He can move in bed only by a wriggling motion.

The calves appear as large as those of a vigorous man, contrasting very strangely with the wasted thighs. They feel quite firm, even when relaxed, and when he contracts the muscles they stand out well, and are hard and elastic. The heads of the gastrocnemii especially become prominent, standing out like firm subcutaneous tumors. He has considerable power of flexing, adducting, and abducting the feet, but the extensors are very feeble. The muscles of the right thigh and leg are decidedly stronger than the corresponding ones of the left side.

In rising from the recumbent position into a sitting one, he is obliged to make a very strong effort. When about to stand up, he throws his body forward till it almost rests on his thighs, and then, placing his hands on his knees and rising a little from his seat, he slowly raises his body by sliding his hands up his thighs; and when he has raised himself as far as possible in this way, he places one hand after the other on a chair-back or edge of a table, and leans forward. He then, by jerks of the alternate sides of the body, draws his legs forward, thus assuming more and more nearly an erect position. So soon as he approaches this, the legs are widely separated, the shoulders thrown quickly back, and the abdomen protruded, and, after tottering a few times, he secures his equilibrium in this peculiar position. It is very tiresome for him to stand without some support, and when he does so

he bears with his whole weight on the right foot, the sole of which rests flat on the ground, while the left leg is thrown forward in advance, and the heel elevated from the ground. When a support is afforded him, he places both hands on it, and leans forward, rising on the balls of the feet, so that the heels are raised one-half inch from the ground. (See figure.) In this position he stands for half an hour or more at a time. The muscles of the calves are contracted and thrown into prominent relief.

In walking, as in standing, the shoulders are thrown very far back, and the lumbar depression is rendered very deep; the arms hang down by the sides, coming decidedly behind the line of the buttocks. The legs are kept quite widely apart. He advances each one by resting his weight on the opposite foot, and then swinging forward the whole side, the foot describing a slight arc. At the moment of thus swinging forward either leg, he rises slightly on the opposite foot. While standing on the right foot, the whole sole rests on the ground, though the heel merely touches it lightly; but when his weight is thrown entirely on the left leg, the left heel still does not touch the ground. The effort of advancing each leg is evidently great; the muscles of the thighs tremble and quiver, but those of the calves contract forcibly and are thrown into bold relief. Walking is very tiresome, and gives him pain and soreness in the back. No fibrillar contractions are seen in any of the muscles.

Electric examination, April 23, 1871.—The muscles of the forearm (tested on the right side) contract well under a faradaic current of rather unusual strength; they also respond well to faradization of the brachial plexus. Electro-muscular sensibility is not acute, though this may be a mere individual peculiarity. The muscles of the arm, the pectoralis major, and the trapezius all contract on faradization, whether direct or applied to their motor points. It requires rather too powerful a current to produce these effects. A still more powerful current is required to induce contraction of the thigh-muscles, but they all respond, though feebly: the sensibility to the current is impaired. The contractions of the flexors of the leg on the thigh are the most feeble, and are obtained only by very strong currents. The muscles of the leg respond more actively than the muscles of the thigh, whether the electrode is placed over the nerve in the thigh, or on the motor point of the muscle, or directly over its body.

When tested with a galvanic current, the muscles of the calves of the legs contract with each interruption and renewal of a current of rather unusual strength (twenty cells, Stöhrer), and electro-muscular sensibility is acute. The muscles of the thighs also respond, but with more difficulty, to the galvanic current.

The following measurements were taken:

Right arm, greatest circumference				7 inches.
"	forearm, circumference one inch above wrist			6 "
"	"	"	at middle	8¼ "
"	"	"	three inches below elbow, point of greatest thickness	8½ "
"	thigh, circumference hand's breadth above knee			10¼ "
"	"	"	at middle	11½ "
"	"	"	close to perineum	12⅞ "
"	calf,	"	at thickest part	12⅞ "
Left arm, corresponding point				7 "
"	forearm,	"	"	6 "
"	"	"	"	8⅛ "
"	"	"	"	8¾ "
"	thigh,	"	"	10½ "
"	"	"	"	11⅝ "
"	"	"	"	12¾ "
"	calf,	"	"	12¾ "

The general *sensibility* is everywhere normal, and there are no subjective disturbances of sensation. The circulation of the extremities is somewhat feeble, and both hands and feet readily become bluish on exposure to cold. The color of the surface is, however, everywhere normal, without any mottling.

April 30.—He had to-day an epileptic attack, with frothing at the mouth, general muscular spasms, and unconsciousness, lasting for eight minutes. There was deep stupor and sleep for four hours subsequently, and he did not entirely recover until the following morning. The fit was preceded for about a minute by the foolish fancies he has frequently had before.

Ordered Syr. Phosphat. Comp., fʒij, t. d.
Faradization of arms and legs on alternate days.

Remarks.—I have been led, gentlemen, to detail at unusual length the symptoms present in this case, not only on account of its great interest and rarity, but because it is the first case of this disease that has been carefully studied and described in this country.* In commenting upon these symptoms, I will ask your attention especially to those points which are most highly characteristic.

The mode of invasion of the disease presented a distinct peculiarity. It was marked merely by a progressive loss of power in the muscles of the legs, buttocks, and spinal region, which was so gradual in its development that the patient continued able to run about for eighteen months. In the present case the loss of power involved the muscles of the buttocks and spinal region sooner than usual, since there was a very early development of the next two symptoms characteristic of progressive muscular sclerosis,—peculiarity in the position and gait of the patient, and marked anterior curvature of the lumbar spine. Patients affected with this disease stand and walk with their legs widely separated, as though to enlarge their base of support and thus increase the security of their equilibrium. Duchenne is inclined to think that this position cannot be exclusively due to the weakness of the legs, since in other forms of partial paralysis of the legs the same position is not assumed to an equal degree. It appears to me that the separation of the legs may also be partly accounted for by the extreme obliquity of the pelvis caused by the lordosis of the lumbar vertebræ; and a further cause of this separation of the legs will be found in the mode of walking.

The weakness of the legs and of the gluteal muscles gives to the patient a peculiar gait, which I have attempted to describe. This peculiarity consists essentially in the fact that the patient, in taking a step forward, for instance, with the right foot, throws his entire weight on the left leg, leaning over to that side, and then, by a jerk of the right side of the body, the right leg is thrown or drawn forward, the foot describing a small arc, and the toe pointing downwards. It is evident that this mode of walking must be an additional cause of the separation of the legs, since, when the weight of the body is thrown on one leg and the other is swung around, the step can be made more readily and much longer when the feet are wide apart.

While the weight of the body rests on either foot, it will be noticed that the heel is raised slightly from the

* In the *Boston Medical and Surgical Journal*, November 17, 1870, there is an interesting paper on this subject by Drs. Ingalls and Webber. Unfortunately and unavoidably, the report of the case, which serves as the introduction to the paper, is very meagre. The article contains, however, a valuable tabulated summary of all the cases of this disease on record up to that date. There is also a complete bibliography appended.

ground, or at most touches it very lightly. It is evident that in such a mode of walking as this the muscles of the leg upon which the whole weight of the body is thrown, and which serves as a fulcrum, must be subjected to a severe strain and be thrown into a state of powerful contraction.

It is curious to observe in our patient that, while the wasted thigh-muscles tremble and contract feebly, the muscles of the calves appear to contract very powerfully, and stand out in bold relief. I shall return to this point, but will now merely call attention to the further proof of the greater power of these calf-muscles, shown by the elevation of the heel from the ground at the very moment that the whole weight of the body is resting on the same leg. This elevation of the heel is not a voluntary act, intended to give greater height, so that the sweep of the other leg may be more readily effected, but is the unavoidable result of the marked superiority in power of the extensors of the foot over the flexors.

The next striking peculiarities about patients with this disease are the mode of rising from the sitting to the standing position, and the posture assumed while standing. Nothing could more strikingly demonstrate the great weakness of the extensors of the back than the manner in which our patient gradually raises himself into the erect posture by the power of his arms. The weakness of the same muscles compels him, when standing, to counteract the tendency to fall forward by throwing the shoulders far back, while the lumbar spine projects forward, thus deepening greatly the lumbar depression, and producing the deformity known as "ensellure," or "saddle-back." Duchenne calls attention to a peculiarity of the spinal lordosis in this disease, as distinctive from that seen in atrophy or paralysis of the muscles of the abdominal walls, in the fact that a vertical line dropped from the most prominent spinous process falls behind the plane of the sacrum. This peculiarity is very clearly shown in the accompanying wood-cut, which illustrates the position my patient assumes when standing and leaning on a support.

I have already alluded to the disproportionate strength of the muscles of the calves; and this is also clearly seen in the existence of double equino-varus. It is impossible to ascertain the precise period when this deformity began, but it is probable that, as is usually the case in this affection, we may class it as one of the later symptoms. At all times, but especially when the patient walks, the tendo-Achillis on each side appears unusually tense, prominent, and large; but there can be no doubt that the tendency to club-foot is due solely to the superior strength of the muscles of the calf (the extensors of the foot) as compared with that of the flexors. Thus, on directing the patient to make various movements with his feet, it is readily perceived that the movements of flexion of the foot are very feeble, while those of extension and adduction are quite vigorous.

Finally, it remains, in studying the symptomatology of this case, to examine carefully the relation which the atrophy and hypertrophy of the muscles bear to each other. I desire to call more particular attention to this point, since, in the cases of this disease hitherto recorded, muscular atrophy has either not been present, or has not attracted the careful study it merits, at least from a theoretical point of view. The changes in the muscles have invariably been preceded, as in the present case, by a stage of progressive debility of varying duration, after which the first alteration observed in the muscles has been, in a majority of cases, a gradual increase in their bulk. In a few cases, atrophy of certain groups of muscles has coincided with enlargement of others. In the present case, however, the processes have been differently related. In all of the muscles affected, including those of the extremities, of the buttocks, lumbo-spinal region, and shoulders, the first change noticed has been a slowly developing atrophy, which has advanced in the case of certain muscles (*e.g.* the biceps flexors of the arms and the calf-muscles) to an extreme degree. Thus, wherever enlargement of the muscles is noted, it has been developed as a secondary change consequent upon a primary process of atrophy, a fact which appears to me highly important as bearing on the affinities of the disease we are considering.

The modes of distribution of these two conditions are, however, quite dissimilar. Thus, in the case of the atrophic change, it has advanced from the feet upwards, successively involving the muscles of the calves, thighs, buttocks, lumbo-spinal region, shoulders, arms, and forearms. On the other hand, the process of consecutive enlargement, having also appeared first in the muscles of the calves, has affected in addition only the muscles of the forearms and two of the heads of the triceps muscles. This irregularity in the distribution of the excessive muscular growth has been noted in other cases, in some of which it has remained limited to the legs, or has involved in addition the arms and even the face. The usual rule is, however, for it to affect the legs first, and thence to extend to the truncal muscles.

The statement is made by several observers that the weakness of the muscles increases with the increase in their bulk; and in certain cases this would appear to have been the case. More usually, however, no direct relation exists between the loss of power and the apparent enlargement of the muscles; and it may even happen, as in the present case, that those very muscles are by far the strongest which have undergone most marked secondary enlargement. This is clearly seen in the production of double equino-varus by the over-action of the extensors of the feet, and is no less true of the muscles of the forearms. It is important to note carefully this fact, since it shows conclusively that, whatever may be the nature of the change in the muscle which leads to its enlargement, its first and direct effect is not to weaken the contractile power.

The affected muscles in this disease give different results when tested with faradaic and with galvanic currents; the results also vary at different stages of the same case. In the present instance, the results accord with those obtained in a number of cases, especially in those studied by German observers; that is to say, the muscular contractility, as tested by faradization, is impaired in all the affected muscles, those which are hypertrophied, however, contracting more actively than those which are atrophied. The galvano-contractility is also slightly impaired. The electro-muscular contractility has been found unimpaired in the earlier stages of the disease; but later it diminishes, the muscles continuing, however, to respond actively to galvanism after they have partly lost their power of responding to faradization.

Electro-muscular sensibility has been found normal or impaired in different cases: in my patient it is diminished to faradization, but remains acute to galvanism. The temperature of the affected parts remains normal in some cases, while in others it is lower than that of the trunk, and the skin has then been observed, in a few cases, to be marbled or mottled.

There is an entire want of disturbance of the general health in this singular disease. The appetite remains good until a late period, digestion is well performed, and the action of the bowels is regular. Neither the rectum nor the urinary bladder becomes paralyzed. The disease is not attended by any pain or alteration of general sensibility.

It is a singular fact that in a notable proportion of the cases progressive muscular sclerosis has occurred in children of feeble intelligence or in idiots. There is, however, no necessary connection between it and any

kind of cerebral disturbance, since in some cases the disease has existed in a well-developed form in conjunction with a normal condition of the mental functions. The complication of epileptiform convulsions, which is presented in the case before us, is a hitherto unobserved one. It is, however, associated with such perfect retention of memory, such activity and clearness of mind, and such integrity of all the special senses, that I cannot regard it as any evidence of an organic affection of the brain. I shall, however, return to this point hereafter.

I have thus dwelt upon the various symptoms of this disease, which we have seen to be characterized by a period of gradually increasing debility, soon followed by peculiarities in the mode of standing and walking, by lordosis of the lumbar spine, and by equino-varus; while later still the enfeebled muscles either undergo atrophy, with a subsequent remarkable enlargement of a greater or smaller number of them, or they pass into this state of enlargement without undergoing any previous diminution in size. The subsequent course of such cases, so far as known, may be told in a few words. In all instances where the disease has reached the stage in which the symptoms are fully developed, a fatal result has followed. The disease is a slow one, and may occupy several years in reaching the period of its full development; it then remains stationary for several years longer; but finally a stage ensues in which the loss of power rapidly increases and extends, with or without accompanying atrophy, to muscles previously unaffected. The sufferer is soon confined to bed, and death occurs in one or two years, either from sheer prostration or from some intercurrent disease.

When we come now to ask ourselves what relation this disease bears to the various forms of paralysis or of muscular atrophy, we are met by the difficulty that, until the present time, but one careful post-mortem examination has been made of the body of a patient dying from this malady. In this instance the nervous centres were examined by Cohnheim, but with entirely negative results. But although, therefore, there is still great need of further examinations of the internal organs, nerve-centres, and ganglia of the sympathetic nerve, much light can be thrown upon the question by the careful examination of the tissue of the affected muscles. This is secured by the use of a little instrument, devised by Duchenne, and termed an "emporte-pièce,"* by which fragments can be obtained from the substance of any superficial muscle and subjected to microscopic examination.

I have thus obtained a fragment from each of the gastrocnemii and from the left deltoid muscles, and have found the following appearances, after careful microscopical examination of each piece.

(To be concluded.)

THE PAIN OF LOCOMOTOR ATAXIA AND ITS RELIEF.—Dr. Althaus, in a communication to the *British Medical Journal* for May 13, 1871, expresses his belief that the paroxysmal pains in locomotor ataxia are owing to tetanic spasms of the muscular coats of the arteries, caused by irritation of the vaso-motor system of nerves. We must, therefore, he says, look for remedies chiefly among those agents which we know to possess a powerful influence on the sympathetic. Among these the continuous galvanic current stands *facile princeps*. The current is to be applied, not *loco dolenti*, but at the neck, to the course of the cervical nerve. A case is given in which much relief was experienced from the application of galvanism.

* This useful little instrument is shaped like a trochar. The blade is, however, a hollow cylinder, composed of two parts, one of which, bearing the point, is fixed, while the other can be withdrawn a little by sliding a movable button on the handle. The trochar is introduced closed into the substance of the muscle, the button withdrawn, so as to open the cylinder and allow a fragment of muscle to project into it; the button is then pushed forward, cutting off and securing the little morsel of tissue.

CLINICAL LECTURE
ON MONSTROSITIES.

ILLUSTRATED BY A REMARKABLE LIVING DOUBLE MONSTER.

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GENTLEMEN:—I have brought before you this remarkable living specimen of a double monster, not to gratify an idle curiosity, but in order to enlarge the scope of our knowledge. Should the subject of monsters seem to you unworthy of scientific investigation, consider its practical bearing upon obstetrics, and its interesting relations to the study of embryology. Exceptions prove the rule, and the anomalies of Nature do good service by throwing much light upon her normal operations. The study of the one group illustrates the other, and by this interchange of support I hope to show to you that single and double monsters do not result from a violation of those laws which govern our development, but simply from an embarrassment to their free operation. Let me first, however, call your attention to these unfortunate creatures,—or *creature*, shall we call it?—lying so contentedly upon this table, and happily unconscious of the interest they are exciting.

On the 12th of last October, Mina and Minnie Finley were born in Peru township, Morrow county, Ohio. Early in this (her fourth) pregnancy the mother met with a severe fall, and narrowly escaped a miscarriage. The labor was unusually easy, the mother being quite alone at the moment of delivery. From the position of the children in the bed, Dr. Besse, who arrived soon after, concluded that Mina—the larger child—was born first. There was but one placenta and but one cord. Shortly after birth the umbilicus took on extensive sloughing, which seriously compromised their lives. From the consequent loss of structure, the fovea has become effaced, and nothing but a large cicatrix—equidistant from each vertex—indicates its former site. This monstrosity consists of two individuals, fused together, on a common longitudinal or vertebral axis, by one pelvis common to both. Each pole of the common vertebral column terminates in a head, whilst each individual is normally developed as far as the pelvis. On one side of this appear two perfectly-formed legs, one of which belongs exclusively to Mina, the other to Minnie,—a fact proved by tickling each foot alternately. Between these limbs are situated one anus and one set of the external genital organs of a female. On the opposite side of the pelvis projects a rudimentary limb, made up of lateral halves, contributed equally by each individual. It contains a broad femur deeply furrowed in the median line, two tibiæ, and two fibulæ, and ends in a foot furnished with two calcanea, two big toes, and six little ones. This fused or siren limb is so twisted on its axis that its heels look upward,—while the children are lying on their backs,—conveying the impression that the half of this limb nearer to the one child belongs to the other child. The vascular and nervous systems of each individual are independent and distinct. Thus, the pulse in one beats faster than that of the other; one—as you observe—is now asleep and motionless, while the other is awake and playfully tossing about its arms and leg. One of these children is weak and puny, the other healthy and active. A few weeks ago, a change of milk at Columbus, Ohio, disagreed with Minnie, who became quite sick with a diarrhœa, while Mina, being more robust, remained as well as usual. It was now noticed that green and liquid stools alternated with those of a feculent character. Ordinarily, the act of defecation in the one child seems to excite peristaltic movements in the bowels of the other, as shown by two copious evacuations in quick succession. These facts lead me to think that each individual is provided with its own alimentary canal, which unites with its fellow to form one common rectum. They also have probably but one bladder between them. Thus,

separated by brain and intelligence, and distinct individuals as regards the more vital organs, they yet share in common the more degraded apparatuses of animal life.

On referring to different works on teratology, I find that this form of monstrosity is by no means unique. Dr. G. J. Fisher (*Trans. Med. Society of the State of New York*, 1866, p. 252) details four such cases, each one exactly similar to the specimen before you, with the single exception of the twist on its axis of the fused limb. A fifth is reported and illustrated by Ambrose Paré (*Les Œuvres, etc.*, Lyon, 1652, p. 652). The wood-cut of a sixth is given by Ulysses Aldrovandus (*Monstrorum Historia*, Bononiæ, 1642, p. 646). For a knowledge of the seventh I am indebted to the courtesy of Dr. Louis S. Stillé. It was born in Mers, France, in August, 1845, was examined in September by a commission appointed by the Académie des Sciences, and one month later was still alive (*L'Illustration*, November, 1845, p. 165). Just before entering this room, Prof. Joseph Leidy informed me that an eighth was born in Ireland: it lived a week, and was, after death, sold to the College of Surgeons in Dublin (*Todd's Cyclopædia of Anatomy and Physiology*, vol. ii. p. 317, fig. 146). The same gentleman also tells me that Rokitansky (*Lehrbuch d. Pathol. Anatomie*, 3d ed., p. 321, fig. 7) gives the figure of a similar case, but does not state where it occurred.

Although this is not, then, a unique case, so far as form is concerned, it is so when we consider the length of time the children have lived, since in all the other cases, with but a single exception, death took place before the fifth day. The interesting question may now spring up in your minds whether upon the death of Minnie—the puny one—her sister could live on indefinitely,—whether there could be repeated the grim story of the two galley-slaves chained closely together, one of whom, when jaded out by grief and hardship, sickened and died, leaving his comrade to drag about the putrid body by day and to shudder over it at night, until, stricken down by horror and poisoned by the stench, he too at last ceased to live. Fortunately, such a fate is not in store for either of these children: the history of other double monsters, such as Rita and Christina, and the Hungarian sisters, shows that the death of one is invariably followed by the immediate death of its companion.

From the remotest antiquity, monstrosities have attracted the attention equally of the wise and of the ignorant. Hippocrates and Galen, Pliny and Aristotle, and many other classic physicians and historians, have written about them. Since the year 1549 there have been issued from the press over three hundred works and pamphlets upon this subject, whilst of double monsters alone there are recorded over five hundred cases. The word *monster* is derived from the Latin verb *monstrare*, "to point out" or "presage;" for, in former days, any such deviation from the ordinary human type was deemed an omen of evil import,—a harbinger of some approaching calamity. Hence, until within a century and a half, the history of monsters has been a collection of marvellous tales, exaggerated by superstition and fear.

Influenced by such a belief, it was the custom of the Greeks and Romans to destroy all malformed children. So late as the seventeenth century, Riolanus wrote a work entitled, "Whether, after the example of the Romans, monsters ought to be destroyed."* In it he directs that "giants and dwarfs, and children with six fingers, *may* be suffered to live, but only in perpetual seclusion." Even at the present day a popular feeling prevails that it is the duty of the physician to destroy the lives of all such unnatural offspring. But, gentlemen, God, who alone gives life, has not delegated to us the right of taking it. Had such a cruel practice been enforced, Ireland would now lack in the House of Parliament her eloquent champion,—the armless and footless Arthur Kavanagh. The Siamese twins, suffered to live, have become prosperous farmers and good citizens; and who are we, to say that these children cannot become useful members of the human family?

There is yet another prejudice to combat. Even in this enlightened age the vulgar delight in tales of human and animal monsters resulting from intercourse either between man and beast, or between animals of widely different genera. Ancient mythology teems with such allusions, and pagan sculptors have perpetuated this infamous belief. But science steps in to tell us that these monsters are not the hybrids of an unnatural congress, but mere vices of conformation, due either to irregular *excess* or *arrest* of embryonic development. Variations in their external conditions may produce in organisms corresponding variations, capable of being propagated. The stability of species may possibly be affected by such progressive modifications; but this does not invalidate the Mosaic account of the Creation. God created every creature and every living thing "*after his kind*;" and this primitive law of specific generation remains unshaken by the rude assaults of vain philosophy, which tickle the imagination, but contradict the reason.

Early in the last century, Haller rescued the subject of monsters from the idle speculations of the ignorant, and raised it to the dignity of a science. Bichat still further elaborated it; but to no one are we more indebted than to Isidore Geoffroy St.-Hilaire, who, in 1832, first published his splendid work upon "Teratology," as he termed it,—a compound word, derived from τερας, "a monster," and λογος, "a discourse." This name, so appropriate for the science of monstrosities, has now been generally adopted. By careful dissections and numerous comparisons, St.-Hilaire found that all the so-called monsters followed certain laws of development, in harmony with those of embryology, and were in fact capable even of classification. The science of "double monsters," or *diploteratology*, which more especially concerns us, has been carefully elaborated by one of our own countrymen,—Dr. G. J. Fisher, of Sing Sing, N.Y.,—who contributed several exhaustive papers on this subject to the Transactions of the Medical Society of the State of New York for the years 1865, 1866, 1867, and 1868. From this source I have borrowed most of the materials for this lecture.

According to Dr. Fisher,—and I here quote much of his language,—the genesis of double monsters is not an accident or a mere freak of nature, but the result of an obedience to three invariable laws.

1. *The law of Unity of Sex.*—Out of over five hundred cases of human double monsters, as well as of innumerable cases in the lower order of animals, in no single instance has this law been violated. The account of a double monster of both sexes, given by a clergyman of Giessen, is very properly rejected by Virchow and other teratologists. The individuals of a double fœtus must be either both males or both females, whilst in the vast majority of cases they have been *females* in preference to males.

2. *The law of Homologous Union.*—That is, the union is symmetrical in all degrees of duplicity, as is the union of the two lateral halves of a single fœtus in normal gestation. In other words, there is an equal balancing of parts and organs in each individual. The same muscle of the one fœtus unites with the same muscle of the other; the same bone to the same bone; the same nerve or blood-vessel to the same nerve or blood-vessel; and so on, until even the same parts and

*"An Romanorum præceptis monstra interfici debeunt," Paris, 1605.

the same organs are united to their fellows, heart to heart, stomach to stomach, back to back, side to side, and *pelvis* to *pelvis*, as in the children before us. In those cases of apparent exception to this law—such as a fœtus by inclusion, a parasitic monster, or, for instance, when an infant vomits up the fragments of an embryo (*Revue Médicale*, vol. lxi. p. 412)—it has been found that the union was homologous in the early embryonic periods, but that the growth of one of the individuals being arrested or retarded, this blighted one was overlapped and included by its fellow.

3. *The law of Right and Left Symmetry.*—This means that there will be a transposition of the viscera of each individual in order to dispose them symmetrically in relation to the common median axis of the compound body. If the double fœtus has two hearts, they will be right and left in position, and their apices will converge towards the line of fusion of the two bodies. This will be found true also of the spleens and livers, and of the cardiac extremities of the two stomachs, which will look the one towards the other.

With these three laws to guide us, we are now prepared to weigh the merits of the different theories broached to account for the production of double monsters.

1. They have been attributed to *maternal impressions*. You have all read how the patriarch Jacob "took him rods, . . . pilled white streaks in them," and put them in the watering-troughs, so that, "when the flocks conceived before the rods," they might bring forth "cattle ring-streaked, speckled, and spotted." Ever since that time, a popular belief in the influence of maternal impressions upon the embryo has held its own against the ridicule cast upon it by men of science. Latterly, a growing tendency to adopt this view has sprung up, and such men as Dalton, Hammond, North, and Seguin have joined the ranks of the people. Some weeks ago, you will remember, I stated that the resemblance of certain malformations of the child to certain powerful impressions of the mother is more than a mere coincidence, and that we are forced to accept this popular belief,—with much reserve, however. Yet no educated man can for a moment entertain such a theory to account for the production of double monsters. For how can a maternal impression create a double monster always of one sex, and always obeying the laws of homologous union and of right and left symmetry?

2. The theory was next advanced that they resulted from the fecundation of a double egg,—*i.e.* of two distinct yolks enclosed in one capsule; but when subjected to the test of experiment it utterly failed. Prof. Panum, of Kiel, procured eighty double-yolked eggs of domestic fowls and put them in his hatching-apparatus. Very few of these came to maturity, because the pressure of the increased bulk tended to destroy each embryo. From those which he succeeded in hatching, two distinct and separate chicks were produced, which, like other twins, were either of the same sex or of opposite sexes.

3. Another still more plausible theory was next suggested, that double monsters were originally twin conceptions, but that, the membranes separating them being absent, imperfect, or absorbed, the two bodies were brought into close contact with each other, and coalesced by reason either of some inflammatory action, or of the strong formative power existing at that period of uterine life. On a close examination, this theory will not stand; for—(*a.*) Twins may be of different sexes. (*b.*) One-third of twins are contained in but *one* amniotic sac (*Lond. Obstet. Trans.*, vol. xi. p. 69), the very condition proposed as most favorable to coalescence, and yet usually in these cases the twins are of opposite sexes. (*c.*) This theory will not explain the laws of homologous union and of right and left symmetry, for merely fused twins must coalesce at any irregular point of contact, such as an arm to a foot, a back to a breast, a head to a pelvis, which, however, is never the case.

4. Compelled to advance a theory in harmony with these three laws, leading teratologists now hold that every double monster is the product of but a single ovum, whose vitelline membrane contains two primitive traces—*i.e.* two neural axes—instead of one. But the question still remains open, whether these two primitive traces are evolved as such from the ovum during the process of its segmentation, or whether they result from the splitting of an original one into two by vertical division,—a property which is known to belong to some polyps and infusoria.

You have been taught that the first evidence of successful fecundation is the division and subdivision of the yolk into segments,—*i.e.* the *segmentation of the vitellus*,—by which true animal cells are produced. These, by aggregating and cohering at their edges, form the *blastodermic membrane*. As advancing organization takes place, we find this membrane thickened into an oval spot,—the *embryonic spot*. Enclosed within it is a transparent space,—the *area pellucida*,—within which runs longitudinally a delicate line or furrow,—the *primitive trace*. This is the cerebro-spinal axis of the germ man, from one pole of which are evolved the brain and head, from the other the sacral plexus of nerves and the lower extremities.

It is reasonable to affirm of each entire ovum a sexuality which decides the sex of its primitive trace. Hence, should the ovum contain two primitive traces, or, *a fortiori*, should one trace be split into two, they must be of the same sex. Also, as the process of development of these two traces will be limited to but one ovum, it will be under the control of strictly identical germinal laws, and thus homologous and symmetrical development and fusion will result. For it is easy to see that, as these two traces evolve, fusions, malformations, and absence of parts must take place from embarrassments to their growth at the line of contact. Further, the degree of duplicity and the extent of fusion will depend upon the proximity or remoteness of these two primitive traces and the relative inclination of their axes. This so-called *segmentation* theory, as Virchow observes (*Richmond and Louisville Journal*, January, 1871, p. 23), "is acceptable not only for its simplicity, but because it also accounts for every kind of duplicity,—as a sixth finger, etc." It also explains the harmony of temper and identity of tastes which double monsters exhibit, for by this theory they originate from a single germ, and their mental apparatus is "developed from an originally identical deposit."

In conclusion, the question has probably arisen in your minds why single and double monsters are females in the vast majority of cases. In these days of advance, I approach the solution of this problem with much diffidence. In the inferior animals monsters relatively occur far more frequently than in the human family, and even then are usually of the female sex. Teratologists, therefore, contend that this affords only an additional proof that woman is an organism of a lower type than that of man. This explanation you will accept or reject, as you please.

Ulcers a Cause of Bright's Disease.—Prof. Fischer, of Breslau (*Boston Medical and Surgical Journal*, May 25, 1871, from the *Journal of Cutaneous Medicine*), has shown that chronic ulcers of the legs, if allowed to persist unhealed, invariably lead to *albuminoid degeneration* of the kidney. Hence the cure of such ulcers becomes a matter of great importance. Dr. F. recommends Langenbeck's continuous bath as the best treatment.

ORIGINAL COMMUNICATIONS.

ANTERIOR LUXATION OF SEMILUNAR BONE—EXCISION—RECOVERY.

BY J. J. CHISOLM, M.D.,

Professor of Operative Surgery in the University of Maryland.

ALEXANDER STEVENSON, aged 25, tall and stout, a sailor, while engaged in taking in sail, on the 26th of March, 1871, fell from the main yard to the deck, a distance of about twenty-five feet. He fell upon his right side, with his right hand partially extended to break the fall. Besides sundry bruises, he sustained so severe an injury of the right arm as to induce him to think that he had fractured the bones above the wrist, and for the treatment of this he came under my care at the Baltimore Infirmary, ten days after the accident. When examined, there was not much swelling of the arm or hand, so that it could be seen that the axis of the hand was perfectly in line with the axes of the radius and ulna. Pressure with the finger upon the outer surfaces of the radius and ulna, from the elbow to the styloid process of each bone, did not cause the sharp pain which is so constant a symptom when a broken bone is pressed upon at its point of fracture. A large, rounded, hard, subcutaneous prominence existed on the front of the wrist, beneath the upper wrist-fold and directly over the site of the semilunar bone. This irregularly outlined, incompressible tumor stretched the skin, and was so firmly fixed as to exhibit not the slightest motion when manipulated with force. From the median position of this hard mass, which had been detected immediately after the fall, and which had not previously existed, dislocation of the semilunar bone was diagnosed. This opinion was confirmed by thrusting a needle, to the depth of an inch, into the back of the wrist, thus showing, by the free movement of the point in every direction, that a cavity existed where normally the compact semilunar bone is found. The pressure made by the luxated bone kept the fingers in forced and painful flexion. The immobility of the bone rendered futile all attempts at reduction.

Three weeks after the occurrence of the injury, finding that the presence of the bone would permanently destroy the movements of the wrist, and that the slightest motion in the fingers continued to give great pain, I placed the patient under the influence of chloroform, and removed the displaced semilunar bone through an incision in the median line 2½ inches long. The operation I found much more tedious than I had anticipated, notwithstanding that the bone was completely dislodged from its socket. The force which produced the luxation had not lacerated all the ligaments, so that when the bone had been loosened from its cavity a rotary motion had been imparted to it of so extensive a character as to give it a half revolution on its lateral diameter. This turned the crescent-points and the concave surface for the reception of the rounded head of the os magnum towards the lower end of the radius, while the convex surface belonging to the radio-carpal joint was turned towards the fingers, and was lying over the head of the os magnum. Some of the untorn ligaments were so stretched over, and others under, the luxated bone as to tie it down firmly in its new position, rendering it very difficult to enter the point of a knife between the semilunar bone and its closely-hugged neighbors for its isolation and removal. Although these tensely-drawn ligaments kept the semilunar bone immediately over its proper area, its rotated position brought together such reversed and therefore irregular surfaces of bone and cavity as to render reduction quite impossible.

One would suppose, *a priori*, from the number of bones which compose the wrist, that some of these elements would be readily displaced, notwithstanding the many ligaments which run over as well as between the bones, binding them firmly together, and the very numerous tendons which surround the carpal joint, —especially since the hand is so constantly exposed to injury, force being transmitted to the carpal joint in most of the falls upon the upper extremity. The application of force to the hand, however, appears to be so distributed among the many carpal bones in the transmission of concussions, as to make these bones capable of withstanding much greater violence than can be with safety applied to the radius. Hence the very common accident of a fractured radius from falls upon the hand, and the rarity of fracture or luxation of the carpal bones themselves. Of the eight bones of the carpus, some are much more likely to receive the concentrated force of blows than others. In examining the arrangement of the two rows of bones and their metacarpo-phalangeal connections, it will be found that blows upon the hand and fingers pass upwards in such a way that concussions upon the first and second fingers would be transmitted to the scaphoid bone, and that concussions upon the third, fourth, and fifth fingers would be conducted through the length of the os magnum and sharp upper angle of the unciform bone, to the semilunar bone, and thence directly to the radius. It is only under peculiar circumstances that these upper bones of the carpus, squeezed between the ascending force transmitted through the hand bent in a certain position, and the descending weight of the body, could be dislodged from their sockets. These peculiar conditions, in falls which are so very common, can seldom exist, for among the rarest luxations of the skeleton are displacements of the carpal bones.

The extreme rarity of this lesion is readily perceived upon consulting our familiar and standard authorities. Most modern writers on luxations, even when they have apparently prepared exhaustive treatises, state that only certain partial simple dislocations of the wrist-bones are admissible, all not being equally liable to displacement. All agree that the os magnum and cuneiform bone are exposed to subluxations from their peculiar form, especially if there be relaxation of the wrist-ligaments, and that this partial displacement always occurs, as would be inferred, upon the dorsal surface. In the records of surgery we find a few such cases reported by Sir A. Cooper, Chopart, Boyer, and Richerand, and these have been copied by all surgical writers, forming their chief material for short paragraphs on wrist-luxations. We find such in the writings of the American surgeons Gross and Hamilton, and of the English surgeons Sir A. Cooper, Liston, Fergusson, Druitt, S. Cooper, Holmes, and Erichsen, also in the valuable and exhaustive treatises of Malgaigne, Nélaton, Vidal, and Boyer. All acknowledge that compound luxations, with fracture and extensive laceration of the soft parts, often befall the wrist-bones, either from the bursting of guns held in the hand (a frequent cause), from the hand being accidentally caught in machinery, or from other mechanical violence; but that simple and complete luxations from falls upon the hand are scarcely to be expected. When the os magnum and cuneiform bone are dislocated backwards, the displacement is never complete, and reduction is easy.

On consulting the authorities above mentioned, the only case of the very rare accident of anterior luxation of any of the wrist-bones which I can find reported, is one of anterior displacement of the pisiform bone from muscular effort, occurring in the practice of Sir William Fergusson. Of simple anterior luxation of the semilunar bone, similar to that now reported, I can find no case in the surgical authorities consulted. In Holmes' System of Surgery, it is mentioned that St. George's Hospital Museum, London, possesses the very curious specimen of compound luxation of both semilunar bones, occasioned by a fall from a great height upon the hands. The bones were driven from their cavities through the skin on the anterior surfaces of the wrists, and one bone was dangling from the hand, still held in contact by a few shreds of ligament. Malgaigne reports a second case as occurring in the practice of M. Mougeot de Bruyères, where the expulsion of one semi-

lunar bone from the carpus was the only lesion. The patient, a carpenter, had fallen from a height of thirty feet on his hand, and the semilunar bone, which had been driven through a small wound in front of the carpal joint, was hanging without by some ligamentous fibres. Erichsen reports a simple luxation of the semilunar bone backwards upon the dorsal surface of the wrist. As far as I have been able to consult authorities, these are the only cases of luxation of the semilunar bones reported.

NOTES OF HOSPITAL PRACTICE.

ST. MARY'S HOSPITAL.

SERVICE OF DR. W. W. KEEN.

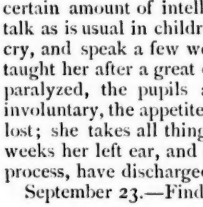
NECROSIS AND REMOVAL OF THE ENTIRE PETROUS PORTION OF THE TEMPORAL BONE.

ANNIE L., born in 1863, was admitted to St. Mary's Hospital, July 13, 1868. No exact history could be obtained. She had been sick five weeks, in a state of insensibility, commencing, it was said, in delirium. She had also had a "running from the ear." She had been called "scrofulous" in childhood. On admission she was entirely insensible, much emaciated, pulse 150 and weak, pupils permanently and widely dilated and insensible to light, sensation and motion entirely absent. Urine and fæces were passed involuntarily. No desire for food or drink, but when put in the mouth they seemed to excite reflex action and were swallowed, and the only limit to this reflex ingestion of food was the supply furnished. She was treated with beef-tea, milk, and Huxham's tincture, for which syr. fer. iodid. and ol. morrhuæ were soon substituted.

No change whatever was noticed for some weeks, but she then began gradually to improve.

September 20.—Has gained much flesh, and displays a certain amount of intelligence. Before the attack she could talk as is usual in children of her age; now she can only laugh, cry, and speak a few words indistinctly, and these have been taught her after a great deal of trouble. The seventh nerve is paralyzed, the pupils are still dilated, the evacuations are involuntary, the appetite is still unbounded, and taste is entirely lost; she takes all things with equal relish. For the last two weeks her left ear, and also a small abscess over the mastoid process, have discharged bloody pus.

September 23.—Finding dead bone in the meatus of the ear, Dr. Grove, by a small incision, removed the piece, which proved to be the entire petrous portion of the temporal bone, much eroded, but still showing the auditory meatus (*b*) and the walls of the three semicircular canals (the line *a* passes under the arch of the superior one). Of the carotid canal no distinct trace could be found, but a groove on the inferior surface seemed to indicate where it had been. The drawing represents the piece of the natural size.



October 1.—Dr. Keen came on duty, and saw the child for the first time. Her general condition is good. She is fat and hearty. She has been "adopted," one may say, by an old woman in the hospital, who is as watchful and careful of her as if she were her own child. She teaches her everything she can, but the child can only mumble a few words, and shows very little intelligence. Pupils permanently dilated and immobile. Entire loss of sight on both sides and of hearing on the left side; slight hearing still exists on the right. Taste and smell wholly lost, so far as can be ascertained with her want of intelligence. On the left side of her face she has lost almost all sensation, and when pricked till the blood flows, she scarcely responds at all; nor is the conjunctiva sensible to mechanical irritation. Motion in all the muscles of expression on the left side is wholly gone, and with the muscles of mastication she can only move the jaw, but not masticate her food. She can stand with considerable assistance, and thus supported can walk a few steps. Her teeth are serrated, and indicate inherited syphilis. No treatment was needed.

March, 1871.—She remains in the hospital as a home. Her mother is dead, but her father, having been lately questioned, denies any syphilitic taint. Her bodily health could not be better, and she is unusually solid and fat. The special senses are as follows:

Sight wholly lost. Dr. William Thomson kindly examined her retinæ carefully, and found complete atrophy of both optic nerves. Pupils still dilated and insensible.

Hearing wholly lost, the right ear also having become deaf.

Taste and smell wholly lost.

Touch entirely restored on the body and greatly improved on the face, where it now exists to say four-fifths of the normal degree.

Her muscles of expression are still paralyzed on the left side, but the muscles of mastication have almost wholly recovered their power.

Her general intelligence has greatly deteriorated. She now utters only the incoherent and unintelligible sounds of an idiot, but she is decided in her likes and dislikes, and indicates them both by sounds and by movements, all of which are now rapid and strong.

Remarks.—It is interesting to trace the clinical history of this case, though I regret that, from circumstances beyond my control, it is rather meagre. From some cause or other,—very possibly syphilitic,—inflammation began in the ear, and was followed by necrosis of the petrous bone. This was followed by universal meningitis, which produced not only temporary insensibility and paralysis, but a permanently impaired intelligence. By its extension also down the sheath of the optic nerves, sight was wholly destroyed. Taste and smell were probably similarly destroyed. Hearing was destroyed on the left side by the primary disease. Whether it was finally destroyed on the right by the same process is doubtful, for the seventh of that side should then have also suffered. My friend Dr. Pepper has suggested that possibly, by the law of Waller, the destruction of the left auditory may have been followed by centripetal degeneration, which crossed from the ganglion of the left nerve to that of the right. The facial being a centrifugal nerve, the degeneration would proceed towards the periphery and not towards the centre, and thus it would escape on the right side.

None of these special senses afterwards improved. Her intelligence, after improvement for a few weeks, retrograded, and is hopelessly destroyed; and during this decline in the powers of the peripheral cerebral cells, it is noteworthy that the condition of nearly all the central ganglia, both sensory and motor, improved, so that now she has complete motion and sensation.

The seventh nerve on the left side was of course wholly destroyed, and the facial paralysis has never improved in the slightest. The lesion of the fifth nerve involved the Gasserian ganglion and the motor root under it to such an extent that both sensibility in the face and motion in the muscles of mastication were reduced to a minimum. Notwithstanding that this ganglion was at the focus of the necrosis which produced the universal meningitis, and notwithstanding the injury probably inflicted by the spontaneous separation and the removal of the petrous bone under it, the ganglion and its nerve have nearly completely recovered.

As to the condition of the carotid we must remain in doubt. The retinal vessels were very small, but were similar on both sides. If, therefore, the left internal carotid was obliterated, the anastomosing circulation has been established by the circle of Willis and other vessels,—a result that would probably be facilitated by the inflammation which existed at the time.

For the main body of the notes I must thank Dr. Hargadine, the then Resident.

TOBACCO VERSUS MALARIA.—Dr. S. P. Crawford, of the San Joaquin Valley, California, states (*Nashville Journal of Medicine and Surgery*) that all the diseases of his neighborhood are affected by the intense malarial infection, and that he has noticed the free habitual use of tobacco is a very great protection against the miasmatic poisoning.

JEFFERSON MEDICAL COLLEGE.

CLINIC OF PROFESSOR GROSS, MAY 15, 1871

Reported by Dr. Ralph M. Townsend.

CONCEALED VASCULAR TUMOR OF THE FACE.

C. B., colored, aged 54 years, has had a tumor on his face for upwards of a year, supposed to be sebaceous, having the feel and external characteristics of a growth of this kind. On cutting into it, however, it proved to be a vascular tumor, and some little time was occupied in controlling the resulting hemorrhage. Needles, armed with strong ligatures, were passed crucially under the mesh of arteries and veins, and the growth was then, subcutaneously as it were, thoroughly ligated.

Such affections as these are generally congenital. These tumors exhibit considerable variety of structure, being sometimes essentially composed of veins, sometimes of arteries, and sometimes nearly equally of arteries and veins. When the tumor is arterial, it generally pulsates synchronously with the left ventricle of the heart.

SYPHILITIC AFFECTIONS.

Mrs. A. H., aged 55 years, has had a circumscribed swelling of the frontal and parietal bones for two years, the result of no injury, attention being first called to it accidentally. She has much pain in the part, which is increased at night and in damp weather. She has not lost her hair, nor had any eruption upon the skin; but she frequently suffers from sore throat, and her headache is so intense at times as to prevent sleep. She was ordered four grains of iodide of potassium and one-tenth of a grain of corrosive chloride of mercury in solution, three times daily, an hour after meals.

Mrs. M., aged 37 years, has an angry and excavated ulcer on the bridge of her nose, the size of a gold dollar. The ulcer is diphtheritic, and the seat of a stinging sensation rather than of a pain. The present sore was not noticed till last week; but months previously portions of the bones of the nose were discharged. She frequently suffers from sore throat, and has a hole in her soft palate. She has also had severe attacks of neuralgia, and lost the hair from her head; but the latter has again grown. She has no eruption upon her skin; and her sleep, weight, and appetite are all sufficient.

The ulcer was touched with a solution consisting of one part of the acid nitrate of mercury to ten parts of water. A poultice of slippery-elm was then directed to be applied to the nose. Internally the patient was ordered—

Sodii iodid., grs. iij;
Hydrarg. chlor. corros., gr. 1-10;
Ext. hyoscyam., gr. j;
t. d.

CONTRACTION OF ADDUCTOR MUSCLES OF THE THIGH.

A little boy, C. M. W., aged 6 years, was brought from the interior of the State on account of supposed hip-joint disease. There was no hurt to which the affection could be traced. The boy first commenced to complain last October. The limb has been in its present awkward condition eleven weeks. There is marked false anchylosis, the thigh is bent at a right angle with the trunk, and the leg is firmly flexed on the thigh. The limb is wasted, but there is no suppuration and no fluctuation about the hip. The fold of the buttock remains distinct. Prof. Gross gave it as his opinion that neuralgia and inflammation, attended by reflex irritation and contraction of muscles, were the cause of the mischief. The articular extremities are inflamed and softened, and care must be exercised in moving the limb forcibly; a fracture might result. There is intense muscular contraction, the adductor muscles in particular, when the limb is partially abducted, standing out in bold relief.

Under chloroform the leg was extended upon the thigh, but subcutaneous division of the adductor muscles had to be resorted to before the thigh could be extended upon the body. By means of a weight attached to the limb by adhesive strips, and passed over a pulley, extension will be kept up, the thigh being well bathed once or twice daily with some stimulating liniment. The child's bowels being torpid, one grain of blue mass and two grains of jalap will be given every third night, followed by some mild aperient in the morning.

CORRESPONDENCE.

DEAR SIR,—In the present contest as to the possible change in type of disease, the quotation I append may be of interest as showing that as early as 1609 there was some general belief as to a change having taken place in the human constitution which caused bleeding to be badly borne. I lit on the statement in Fuller's "English Worthies," ed. 1762, p. 186, and traced it to Dr. G. Hakewill, "An Apology or Declaration of the Power and Providence of God in the Government of the World," London, 1635, fol., p. 242. He quotes there this letter from Dr. Deodate to a neighboring squire.

Yours, etc.,
S. W. M.

"Tristram was a gardener by his occupation, living at Branford in this county. This man, Anno Dom. 1609, fell into a most violent inflammation of the lungs, accompanied with a terrible feaver, shortnesse of breath, stitch of both sides, dry cough, and an unquenchable thirst. Dr. Theod. Deodate being his neighbour (then physician to Prince Henry and the Lady Elizabeth), beholding him of a ruddy and sanguine complexion, adventured to let him blood, though he was of threescore and sixteen years of age. Once he let him blood about twenty ounces, by which evacuation (his blood being extremely putrified) he felt ease for three hours, but afterwards all his accidents returned as violent as before.

"Next morning he repeated the bleeding in the same quantity, whereby the patient only found a momentary ease, his pain returning as violent as before.

"The third day, remembering the rule of Hypocrates, that blood must be let to the changing of the colour, he adventured again on as copious a *phlebotemy* as before, whereby the sick man found an extraordinary ease, who in three days had lost more than *sixty* ounces of blood.

"This Tristram survived eight yrs. after, and dyed anno 1619, a most eminent instance against those who endeavour to prove the decay of the world because men cannot spare so much by blood-letting as in former ages.

PHOSPHORUS AS A REMEDY IN SKIN-DISEASES.—An abstract of a paper on this subject, read before the Clinical Society of London, by Dr. Broadbent, appears in the *London Lancet* for April 22. "If," he says, "the action of remedies and poisons on the human organism is due to their chemical properties, substances allied chemically ought to have an analogous physiological and therapeutical influence, or the diversity in their action ought to be explicable on chemical grounds. In other words, chemical groups should form therapeutical groups. . . . The group of which phosphorus is the head chemically, and of which arsenic is the chief representative in therapeutics, affords an opportunity for the application of the test. Its four members, phosphorus, arsenic, antimony, and bismuth, stand in the order named in regard to equivalent numbers, physical properties, and chemical energy; and their compounds with other elementary bodies form analogous series. Excluding bismuth, which, from its feeble affinities and tendency to form insoluble compounds, may be considered inert, there is, in the mode of action of phosphorus, arsenic, and antimony, as poisons, and in the tissue-changes they induce, a parallelism as remarkable as that of the chemical properties of these bodies, both in the energy and in the character of the physiological effects. The opportunity for bringing out further therapeutical parallelism is furnished by the well-known curative action of arsenic in certain classes of skin-diseases, such as some forms of eczema and psoriasis." Phosphorated oil was given in doses of from four to eight minims to six cases of eczema, and to the same number of cases of psoriasis. It effected a cure in every case except one of the former. Two of the cases of psoriasis proved rebellious not only to phosphorus, however, but to arsenic, and all treatment, general and local.

THE MEDICAL TIMES.
A SEMI-MONTHLY JOURNAL OF
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EDITORIAL.

THE LIBRARY OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA.

I.

THE now venerable College of Physicians was only fifteen months old, and had held but a limited number of sessions for the general purposes of organization, when at the stated meeting in April, 1788, the subject of a library was first introduced to the attention of the members. A series of by-laws was then offered, one section of which was at some future day to refer to the prospective library of the College; but the probabilities of its early establishment must have been considered very slight, as nothing but the bare caption, "Section VII. Library," without one word of accompanying text, is to be found at that date upon the records. The College, then in its infancy, numbered but few members, but they were the representatives of the earnest, active, learned men of the profession, who were not likely to let so important a subject slumber. The new medical organization had been formed at a time when the profession ranked very high in the scale of ability, skill, and social worth, and it enjoyed a large share of the confidence and appreciation of the public. The city numbered at that time only about forty-four thousand inhabitants, and of these probably not more than fifty were physicians. In the annals of those days* we find a full "list of all the physicians and surgeons, as they existed in Philadelphia soon after the peace of 1783," forty-two, all told; and this must have represented very nearly the numerical strength of the profession at the time of the foundation of the College of Physicians, four years later. Twenty-two, or about one-half of these, were among the earliest founders and Fellows of the College, and but one of the whole number lived west of Fifth Street, most of them residing in Water, Front, and Second Streets. The meetings of the College being then held at the University, in Fourth Street below Arch, the College and its nucleus of a library were therefore convenient and accessible to the whole profession. We cannot dwell on this subject further without entering too minutely into details that are somewhat foreign to our more limited subject, which is rather a sketch of the rise and progress of the valuable library of the College than of the College itself.

* Watson's Annals of Philadelphia, vol. ii. p. 386.

The men who founded the institution were those, however, who gave the first impetus to the growth of the library, and they should not, therefore, be passed over without mention. They included Dr. John Redman,—the first President of the College,—an eminent retired physician; several of the professors in the University of Pennsylvania and the College of Philadelphia,—such as Drs. William Shippen, John Morgan, Benjamin Rush, Adam Kuhn, James Hutchinson, Samuel Powel Griffitts, and Caspar Wistar,—Dr. Chovet, an anatomical lecturer of ability and eccentricity, and others, reminiscences of some of whom may be found in the work already referred to.

At the June meeting of the College in 1788, Drs. John Jones, Samuel Powel Griffitts, and Caspar Wistar were appointed a committee to report a plan for the formation of a library for the use of the College, whose report was subsequently considered and reconsidered, and a resolution adopted that "the several members of the College be requested to send to the Secretary such books as they mean to present to the College." This request or recommendation has lost none of its force by the lapse of time, and is quite as applicable to the Fellows of these later days as to those whose contributions were, during the expiring years of the eighteenth century, solicited in behalf of the young and struggling library. The new College must have had this subject very much at heart, for scarcely a meeting was held during the year 1789 at which the matter was not agitated. The first donation of books had already been received, and there was hope that the good example might speedily be followed. Dr. John Morgan had in January of that year requested the acceptance by the College of several medical works, and to him, therefore, belongs the creditable pre-eminence of being the initiator of what is now the largest and best medical library in the United States. The College, as we shall presently learn, could scarcely at that time have been the fortunate possessor of a bookcase, and the anticipation of prospective donations and purchases must have been a source of no little embarrassment. The Censors and Secretary seem to have had assigned to them the duty of collecting donations of books, and of procuring a suitable place for keeping them and a person to attend at stated times; but the office of Librarian must have been comparatively a sinecure,—the library being probably too small to require his services,—for we find no one mentioned in connection with it for the next three years, when in March, 1792, Dr. Nicholas H. Waters volunteered to assume its duties for one year, and he was probably the first Librarian the College ever had.

Even at this early day (1789) the College took steps to enrich the literature of the profession by the contributions of its own Fellows, and to publish a volume of its transactions as often as materials were afforded. A letter was also addressed "to the most respectable medical characters in the United States," requesting such communication and information from them as might tend to promote the interests of the College and

of medicine, and stating also that it was their desire to get up a Pharmacopœia. A hundred copies of this letter were distributed throughout the country, and Thomas Dobson, of this city, offered to print a volume of the transactions "at his own risque." This early publication of the College, which occurred in the fall of 1793, was important not only because it aroused a general interest in its proceedings, but also because it laid the foundation of a system of exchanges which soon became a valuable means of supply of journals and transactions to the library.

In July, 1789, in conformity with a by-law respecting the formation of a library, Drs. Jones, Parke, and Wistar were appointed a committee to prepare a list of books to be purchased at a cost of not more than fifty pounds, Pennsylvania currency; and at the meeting in October they were directed to send to Amsterdam for as many of the European continental publications as was possible under this appropriation. A fair illustration of the tardiness of communication at that time between the Old World and the New — or perhaps of even more tedious custom-house circumlocution than now prevails—may be found in the fact that thirteen months elapsed before the committee were enabled to report that the books "had arrived in sheets and were deposited at the Secretary's house," from which, after being bound in plain calf, they were transferred to the hall of the College. But the miniature library had in the mean while (March, 1790) received accessions of valuable books, by the death of one of its most worthy members, Dr. John Morgan, who bequeathed to the College the works of Hippocrates, Galen, Morgagni, and Harvey, the whole making twelve volumes in folio and one in quarto. As, in the words of Dr. Rush, "the historian who shall hereafter relate the progress of medical science in America will be deficient in candor and justice if he does not connect the name of Dr. Morgan with that auspicious era in which medicine was first taught and studied as a science in this country," so also may it be justly said that no sketch of the early history of the College of Physicians or its library is complete without a tribute of acknowledgment of his profound interest in its welfare.*

In December, 1791, the Secretary cheered the College with the information that the books were now placed in a case in the hall of meeting; but the case could not have been a very large one, as upon the arrival of a fresh package from Europe the following year, only the bound ones could be accommodated, and the Secretary was obliged to keep the unbound ones at his own house. The College left the University room about this time, and held their first meeting at the hall of the American Philosophical Society, January 3, 1792. At this time books were taken out only at the close of each monthly meeting, and a fine of two shillings and sixpence was imposed on every careless or delinquent Fellow who kept a book out beyond that time, with an additional fine of a dollar for every additional month; and the Censors reported the condition of the library every July.

Dr. Michael Leib succeeded Dr. Waters as Librarian during 1792–3, but for many years afterwards we find no mention of the appointment of any other Fellow to that position, and presume that no one thought it worth his while to spend his time in vain efforts to arouse the enthusiasm of the College in behalf of a small and unpretending library, such as it then was. The College was, indeed, too poor to import any more books from abroad. The number of medical societies was very limited, the facilities for publishing were restricted, and the means of intercommunication were so deficient that there was probably but little prospect of any great increase in domestic books and journals. We find nothing on record, in any annals of those days, to show that the medical men of the closing years of that century had accumulated large libraries, from which the College could, either then or prospectively, hope to add to the value or the richness of their own collection. Of the early founders, Drs. John Morgan, Griffitts, Rush, Benjamin Smith Barton, Shippen, and Jones seem to have been the only ones who, during a long series of years, gave to the young library a few contributions occasionally from their own shelves; and yet there was hardly a meeting at which the subject of a library was not brought up for consideration, as a sufficient reminder to the Fellows of its great and pressing needs.

The yellow fever of 1793 interfered with the prospects of the library by diverting the energies of all the best physicians from the lighter paths of literature to the more practical fields of professional duty, and the public health became a consideration paramount to every other. The College in this epidemic, as in that of a few years later, met very frequently to give the Governor such solicited advice as might aid in the mitigation of the disease, for in those old-fashioned days it was not an uncommon event for the State Executive to lean for professional assistance on those whose sagacity and skill commanded universal respect. Between the periods of the two epidemics of 1793 and 1797, however, the library made some little progress. A fresh supply of books was sent for to Amsterdam by the ship William Penn; the Medical Society of London had transmitted a few parts of its Transactions; and the Censors had, in January, 1797, prepared a new list of books for importation, which included but few solid works, and mainly embraced "the different periodical

* Dr. Rush, his biographer, states that during a visit to the celebrated Morgagni at Padua, the latter was so pleased with the doctor that he claimed kindred with him from the resemblance of their names, and on the blank leaf of a copy of his works, which he presented to him, he inscribed with his own hand the following words: "*Affini suo, medico præclarissimo Johanni Morgan, donat auctor.*" This inscription has been extensively quoted on the authority of Dr. Rush, but must have been given by him merely from recollection, as on the title-page of vol. i. of the works of Morgagni referred to—now in the library—we find the following words plainly discernible: "*Viro experientissimo et humanissimo D. Di. Joanni Morgan auctor;*" and on the title-page of vol. ii. the following: *Viro de re anatomica bono medico Do. Dri. Joanni Morgan auctor.*" Dr. Morgan was evidently a man who aimed to be a step in advance of his contemporaries, for we learn also that he was "the first man who ventured to carry a silk umbrella, and also an innovator in first introducing the practice of sending to the apothecary for all the medicines wanted for the sick."

publications on medicine—viz., reviews, journals, etc. —which are published on the continent of Europe in the Latin or French languages." The yellow fever of 1797 and of 1799 again occupied the attention of the College and diverted their interest from the claims of the library; and the same disturbing influences were at work during the subsequent year (1800). These months of earnest and serious labor were not, however, lost to literature, for the results were embodied in a volume of "Facts and Observations relative to the Nature and Origin of the Pestilential Fever which prevailed in this City in 1793, 1797, and 1798," which was printed and distributed under the auspices of the College.

We have no record of the numerical condition of the library at the commencement of the present century. Donations were very infrequent; the College had not the full and untrammelled use of its own room, as a stipulation made with the Philosophical Society allowed the latter also to place its library and apparatus in the same apartment; and the College seemed to be sluggishly content with the tardy increase of its books, as if it feared that additions to their number might crowd the scanty book-shelves, or as if it never dreamed of the brilliant future that was in store for the library. The annual appropriations for the library from 1787 to July, 1794, amounted altogether to sixty pounds, but they were for many years entirely omitted; and, feebly depending for a more vigorous vitality on the occasional attentions of donors of a volume or two at a time, the library grew but little in dimensions or importance for at least ten years. Dr. William Currie, in June, 1800, presented about twenty volumes to the College, including ten of Adrianus Spigelius de Humano Corpore; but the good example was not followed very speedily. The bookcase must also have been a place of deposit for pathological specimens, as in July of that year we find a little stir made at the stated meeting in consequence of the abduction from it of a preparation of a heart of an extra-uterine fœtus. In 1803, Dr. John Coakley Lettsom, the eminent physician and author, who had been elected an Associate of the College the year previous, sent out from England as a present to the College library a number of valuable works, such as Haygarth's Medical Transactions, 4 vols., Lettsom's Hints, 3 vols., Examination of Jenner's Petition, etc. Dr. Lettsom was the first person who, after Jenner's discovery of vaccination, transmitted vaccine lymph to this country. He was the founder of the London Medical Society, was one of the foremost in the establishment of the Royal Jennerian Society, etc., and an associate of whom our own College of Physicians might well feel proud.

In 1805, a committee to whom the duty had been assigned reported the selection they had made of papers for publication in a volume of the Transactions; but the suggestion was left unheeded for several years. The library was reported by the Censors as being in good order, and the admission-fee for new Fellows, which seems to have been fixed long before at a large amount ($26.67), partly with a view of aiding the library at the inception, was now reduced to fifteen dollars. These are the only items of interest connected with the library up to the year 1815. It could not be expected that the little interest taken in the College by its members during the decade from 1805 to 1815 would redound in any way to the growth of the library. It was quite an uncommon occurrence for a quorum to be present at the meetings, and trifling subjects of discussion on non-professional topics of rent, etc., for a long series of monthly meetings constituted the whole programme for the entertainment of the College. An epidemic of yellow fever might have stirred up their tired energies and given life and animation to the proceedings, and perhaps have called a sufficient number of members together to induce them to make a united effort in behalf of the library; but, fortunately for the public, the general health of the community remained unaffected,—and the library languished. For some of this neglect, the war of 1812 is perhaps partly responsible.

From 1815 to 1820 the College grew more active, but its library is credited with but one donation, that of a Spanish work on Tifus Icterodes, by Don Francisco Flores Moreno, from the author. The Pennsylvania Hospital sold to the College ten volumes of the Edinburgh Journal for £6 5*s*., equivalent in those days to $27.77. In 1818, the first constitution and by-laws was published, and also Dr. Wistar's eulogium on Dr. Shippen, which had been delivered a long while before. The catalogue of books was so imperfect that Drs. Parke and J. W. Moore were appointed to prepare a new one, which was completed in January, 1819, and even at this time the College could not boast of the existence of a Librarian. In those days it was the custom of societies to meet "at early candlelight," and we presume the College kept the same unobjectionable hours. Drs. Thomas C. James and J. W. Moore, who had been selected to make out a list of foreign and domestic periodical publications to be purchased for the library, reported the following, which may probably be accepted as the type of the most reliable medical issues of that day: The Edinburgh Medical and Surgical Journal, London Medico-Chirurgical Transactions, London Medical Transactions, Medical and Physical Journal, New England Medical and Surgical Journal, Philadelphia Eclectic Repertory, and London Medico-Chirurgical Journal and Review.

With the exception of an item of two dollars for "cleaning the bookcase and books, and a piece of stained paper for covering the same," in 1825, and another of six dollars for painting the bookcase, in 1829, nothing of interest is to be found on the records in relation to the library until 1834, when the first regularly-constituted Committee on the Library was appointed, consisting of Drs. J. W. Moore, William S. Coxe, and Simon A. Wickes, who in January, 1835, made a verbal report upon the state of the library, "showing that it is in a bad condition and going to decay;" doubtless the result of a third of a century of flickering energy and inactivity. Dr. Henry Bond succeeded Dr. Wickes in 1836, after the death of the latter. To both of these committees is due the credit of adopting earnest mea-

sures for the preservation and safety of the library. In June of that year they presented an excellent annual report, the first which is to be found *in extenso* upon the minutes. "The collection of books," it says, "belonging to the College includes 31 folio volumes, 67 quartos, and 193 octavos, making a total of 291, besides a number of unbound pamphlets. . . . Most of these books appear to have been presented by the members of the College, or by the authors or translators of the works, many years since. Being principally the productions of ancient authors, this circumstance, together with the inconvenient situation they occupy, causes them to be very little read, and more than a year has elapsed without a single volume having been called for. They are in fact to be regarded as a mere foundation, although a valuable one, for a medical library." The committee also indulge a hope that when a safe and easily accessible place of deposit shall be obtained for the books, funds "will be appropriated more frequently and more abundantly, so that the collection may become an object of greater interest, and may better correspond with the dignity of so ancient and so honorable a literary body as the College of Physicians of Philadelphia."

About this time the "Kappa Lambda Association of the United States," under whose auspices twelve volumes of the North American Medical and Surgical Journal had been published, with Drs. Hodge, Bache, Meigs, B. H. Coates, and La Roche as its editors, dissolved, and transferred to the library of the College for safe keeping its journal of proceedings and other manuscript documents, which, though of no special value to the latter, were sufficiently gratifying indications of the feeling of confidence entertained by the profession in the permanency of the College. The members of the Kappa Lambda Society or Association, by the encouragement of social meetings at the houses of members, where tea or coffee and cake constituted the frugal fare, laid the foundation for the Monday evening and other similar medical clubs.

Dr. Coxe died in 1837, and Dr. Squire Littell was appointed in his stead. The College now again began to agitate the question of new accommodations, though the size of the library was hardly formidable enough to excite much anxiety. The Library Committee remained without change for five years, when, in 1842, Dr. Francis West succeeded Dr. Bond, and in 1843, Dr. B. H. Coates, Dr. Moore; and during this period the unvarying annual report was that *one* volume and a few pamphlets had been added during the year, and that little or no use of the library had been made by the Fellows. An effort was made in the fall of 1840 to secure, either by purchase or in trust, "the large and valuable collection of medical books accumulated at great expense for a long course of years by Dr. John Redman Coxe;" but the matter seems to have been dropped, as no subsequent action on the part of the committee is reported.

The same fate seems to have attended a grand combination movement, instituted in October of the same year by a joint committee in behalf of the College of Physicians, the Philadelphia Medical Society, and the Philadelphia Medical College, to form a company to be entitled the "Medical Hall Association of Philadelphia." One of the main motives for its establishment was that "a commodious, safe, and permanent depository for a library" might thus be created; and it was to be the duty of the committee "to apply to each physician, requesting him to inform the committee in writing what books he will contribute, either as donations or deposits, towards the formation of a library." Whether the members of the College shrank from sharing a divided responsibility, or feared that the scheme was too grand and expensive, or wholly impracticable, it is difficult now to say; but they probably took the most judicious course of action when they discharged the committee from further discussion of the subject, and refrained from its renewed agitation. At the same meeting, however, another committee was appointed, to ascertain what amount would be sufficient to authorize the erection by the College of a building for its own accommodation; but they soon afterwards reported that the cost would probably exceed fifteen thousand dollars,—so large a sum in those days that "altho' the proposed plan met general approbation and many liberal subscriptions were promised, they regret to say a sufficient amount cannot be immediately raised to authorize its erection." The project of a new building was therefore temporarily abandoned.

The library received a fresh impulse in 1844, in consequence of a communication from Dr. John C. Otto, stating that he was about to leave the city, and would be willing to dispose of his library,—"a valuable collection of works on medicine and the collateral sciences, all in a good state of preservation." The College purchased the books and bookcases for two hundred dollars, and they were to be deposited, under the control and custody of the Library Committee, in a room over Dr. Hodge's office at Ninth and Walnut Streets; and yet, several months later, the committee reported that they had heard of the purchase of Dr. Otto's books, but had not yet obtained control of them. The committee were instructed to report a plan "for rendering the library more useful and accessible to the Fellows, and to insure its permanent increase in size and value;" and in June they made several valuable suggestions, including one in regard to the appointment of a librarian and of a proper hour for his attendance,—"one hour, twice a month, would be as much as is expedient to devote to that purpose"—one of these hours being at the session of the College; the preparation of an index-catalogue; the obtaining of "a better collocation for the bookcases," etc. The Library Committee appointed in August, 1844, consisted of Drs. Moore, Coates, and West, and they were associated together for several years. In December, the question of removal to the new Mercantile Library building, corner of Fifth and Library Streets, was agitated, and arrangements were subsequently made for that purpose. The library was reported as useless for want of care and arrangement,

and its benefits entirely lost to its members. The books, except Dr. Otto's, were kept in a case on the first landing of the staircase, and altogether the College became so dispirited in regard to the progress of the library, that it was proposed to establish a medical athenæum, to be open daily under the care of the Superintendent of the building, with all the foreign and domestic journals and current medical literature.

In July, 1845, the College met for the first time at the Mercantile Library; and from this period may be dated a reawakened and sustained interest in the library of the College, becoming more and more earnest every year of its existence, and in some individual instances warming almost into affection.

ECONOMY IN HOSPITAL BUILDING.

OUR readers are probably aware that plans are on foot for the establishment of two new hospitals of large size in this city. For one of these, under the auspices of the religious denomination of Presbyterians, the funds will be supplied by charitable individuals; the other, as yet merely proposed, is to be connected with the Medical Department of the University of Pennsylvania, and will probably derive part of its support from the fees paid by students. For the building of each, however, a fund must be raised, and administered by managers or trustees.

We hope that in the carrying out of these enterprises it will be remembered that the cost of the buildings is but the first item, and that if this be reduced to the lowest point compatible with comfort, convenience, and durability, there will be just so much gained towards the funds for subsequent operations. A magnificent pile, of unexceptionable architecture and splendid proportions, can only be useful as a hospital if it is well planned for ventilation, drainage, lighting, heating, and the general comfort of the inmates. And if the ornamentation has swallowed up all the money raised, and the number of patients must be cut down, and the current expenses met by incessant and strenuous begging, can the "all ruffle and no shirt" system have an apter illustration?

On the other hand, if, for example, a fund of $100,000 be contributed towards the establishment of a hospital, and the cost of building and fitting up can be kept within $50,000, there is obviously a sum of $50,000 for investment, the income from which would go towards providing for the current expenses of the institution.

It may be thought that this estimate of the cost of building is too low; but the Hall of the College of Physicians in this city—a very substantial and well-finished structure—cost (including $14,408, the price of the lot) $39,658, while the Children's Hospital was put up for $32,000 (exclusive of the price of the ground). What we would urge, however, is the principle, that in the administration of funds raised for such purposes a wise and prudent forethought should be observed, so that the generous liberality of the donors may bring forth its fullest fruits.

THE CHANGE IN THE SURGICAL STAFF OF THE PENNSYLVANIA HOSPITAL.

DR. AGNEW, whose appointment to the Professorship of the Principles and Practice of Surgery in the University of Pennsylvania we announced in a recent number of *The Medical Times*, has resigned his position as one of the Attending Surgeons to the Pennsylvania Hospital. Dr. Agnew is conscientiously opposed to women engaging in the study and practice of surgery, and, as he cannot therefore consistently take any part in their education, he sent to the Managers of the Hospital, just before their last meeting, a letter, in which he declined a re-election if it were made obligatory upon the medical staff, as it was feared it might be, to give instruction to female students. The Board of Managers did in effect adopt a resolution declaring it to be the duty of the physicians and surgeons of the Hospital to give such instruction, and, Dr. Agnew's letter being under these circumstances regarded as virtually one of resignation, they elected Dr. Richard J. Levis in his place. Dr. Agnew will not, we are glad to say, be lost as a clinical teacher to Philadelphia, for, as Professor of Surgery, he will continue to deliver clinical lectures at the University of Pennsylvania, and there is little doubt that the material for these lectures will soon be furnished by a hospital directly under the control of the Medical Faculty of the University.

The other members of the medical and surgical staff were all re-elected. The new surgeon, Dr. Levis, in addition to having been at one time Attending Surgeon to the Philadelphia Hospital, is at present one of the surgeons to the Wills Ophthalmic Hospital, and Lecturer on Ophthalmic and Aural Surgery in the Jefferson Medical College of this city; he will therefore bring to the performance of his new duties much experience, not only as a hospital surgeon, but also as a teacher.

REVIEWS AND BOOK NOTICES.

CHEMISTRY, GENERAL, MEDICAL, AND PHARMACEUTICAL, including the Chemistry of the U. S. Pharmacopœia. A Manual of the General Principles of the Science and their Applications to Medicine and Pharmacy. From the second and enlarged English edition. By John Attfield, Ph.D., F.C.S. 8vo, pp. 552. Philadelphia, H. C. Lea, 1871.

The plan of the work before us, although somewhat different from that ordinarily followed in similar treatises, has been chosen by the author, whose experience in teaching has been large, since it is that which, "in his opinion, best meets the requirements of medical and pharmaceutical students."

Certainly the bugbears of those medical students whose opportunities for the study of chemical philosophy have been limited are dispelled in a way which merits their sincere thanks; while a great deal of the confusion which seems to exist as regards atoms and molecules, quantivalence and equivalent weights will be removed from their minds, and withal so gradually, that the wonder will be that it ever existed.

That this should happen, however, the book must be carefully read; and if, in addition, any one will take the trouble to perform the various experiments mentioned (the necessary apparatus can be bought for a trifling sum), we venture to say that his time will be well spent, and that he will find himself the better able to take advantage of lectures.

In its mode of teaching, the book fills a place hitherto vacant; but we could wish that the author had bestowed more time upon medical chemistry proper, a branch nowadays too comprehensive to be treated so briefly as it is in this work, without omitting much that is important. For instance, there is no mention of the fact that other substances besides grape-sugar will precipitate the suboxide of copper in Trommer's test, and the author implies that there is no way of estimating with accuracy the amount of urea in any specimen of urine, an error which should have been avoided in a book part of which is devoted to describing the mode of performing quantitative analysis in general. There is no mention, moreover, of Pettenkofer's test for the bile-acids, nor of the means for their detection in the urine, matters which should have been touched on, however briefly. Indeed, we believe it to be impossible for any one to cover the ground our author aims at, in the space he has allotted to himself,—impossible that a book should be an encyclopædia of chemical facts, and teach each fact well, without trespassing on the field so completely occupied by such works as Mr. Watt's Dictionary of Chemistry. Nor is it necessary that this should be attempted.

What the student, here at least, wants, is what Mr. Attfield, in the first part of his work, to a great extent supplies,—a comprehensive treatise on chemical philosophy and its more simple and striking applications. This once mastered, he must go to what has been written with a special bearing on the subject of his studies for those accurate and complete directions which alone will enable him to work and experiment satisfactorily.

Mr. Attfield has of necessity adopted the new theories and nomenclature. He has, however, retained—judiciously, we think—as much of the old terminology as is not absolutely incompatible with the theory which he follows.

Beiträge zur Kenntniss der Nerven des Froschlarvenschwanzes. Von E. Klein, Privat Docent für Histologie. Sitzungsb. d. k. Acad. d. Wissensch. in Wien. Mai, 1870. (Contributions to our Knowledge of the Nerves of the Tadpole's Tail.)

In these researches Dr. Klein used both fresh preparations and those stained by chloride of gold. In the former case the tail was cut off from the living tadpole, protected from pressure by strips of paper placed under the covering-glass, and immersed in a half per cent. solution of common salt. Such preparations, carefully made, allow, during the first half-hour, the nerves to be followed to their finest ramifications. His gold preparations were immersed in half per cent. solution of the terchloride for half an hour, and then allowed to remain for twenty-four hours in water slightly acidified by acetic acid, and exposed to a strong light. They were then transferred to strong alcohol for fifteen to twenty minutes, to enable him more readily to strip off the epithelium from the upper surface with a pair of fine forceps, and then mounted in glycerine. Dr. K. also made sections of the tails thus hardened.

From the central nervous stem (axis) arise nerves of considerable size, some with, some without medullary sheath, and these giving off branches, form a plexus for the most part devoid of medullary sheaths, and containing in their neurilemma numerous oblong and triangular nuclei.

On such nerves we can readily make out the fibrous structure of the axis-cylinder. From this network arises a much finer one, lying immediately below the epithelium, in which the interspaces are so small and the fibres so close that the nucleus of a single epithelial cell may cover from two to four interspaces; and in this are interspersed cells with short pointed processes in connection with the nerve-fibrils, which Dr. Klein regards as multipolar ganglion cells.

He believes this network to be the peripheral termination of the nerve-fibres, and holds, with Hensen, that the nerves do not have any direct connection with the cells of the tissue of the tail, as Eberth has maintained.

The network is interesting in a physiological point of view, since Gerlach has recently shown that the sensitive nerves which enter the posterior columns of the spinal cord unite there in a dense network. The author also calls attention to numerous slightly glistening, sharply-defined fibres in the tissue of the tail, which, like the nerves, become stained by treatment with gold, but can readily be distinguished from them by their course and distribution, as well as their entire want of nuclei. They have three principal directions: first, parallel to the axis of the tail; second, oblique from the axis to the periphery; and third, from the epithelium of one side to that on the other, presenting a spiral form. Dr. Klein believes these fibres to be a variety of elastic tissue.

In a subsequent number of the same Proceedings (February 9, 1871), Dr. Alex. Chrschtschonovitsch, of Kasan, gives the results of his investigation as to the distribution of the nerves of the vagina in the rabbit and the dog. In the former, the meshes of the network of nerves are finer than in the latter, but in both their peripheral termination is in a subepithelial network, which gives off a still finer one surrounding the lower layers of epithelial cells. The bundles of unstriated muscles are also surrounded by nerves, which give off fine filaments, surrounding the individual muscle-cells. The author, however, was never able to trace any connection of the nerves with the epithelial or muscular cells, or with their nuclei.

We have been able from personal observation to corroborate many of the statements of Dr. Klein, and cordially recommend to our readers the tissue of the tadpole's tail as a field for the study of the minute structure of capillaries and nerves.

When properly stained with gold, we know of no more beautiful or instructive microscopic object.

Hair as a Suture and Ligature. By John T. Darby, M.D., of Columbia, South Carolina, Professor of Anatomy and Surgery, University of South Carolina. 8vo, pp. 20. Louisville, Bell & Co., 1870.

This pamphlet, which has apparently been first read before a medical association, then printed in the *Richmond and Louisville Medical Journal*, and is now issued as a separate article, bears the marks of extreme haste in its inception, with utter neglect of all revision. The formation of its sentences is careless and inaccurate, making the paper as a literary production wholly unworthy of the reputation of Dr. Darby.

Dr. Darby does not claim for himself priority in the use of hair sutures, it being stated that the idea occurred to Mr. T. Smith, of St. Bartholomew's Hospital, London, in 1861. To remove the difficulty which presents itself in securing a firm knot, the following directions are given as a modification of the surgeon's knot, which is "readily made by passing the end from the right to the left, and the left to the right; take then the end in the left hand, and pass it through three times, and draw down the loop; cross the ends back again from left to right, and take the end in the left hand, pass it through twice, and draw down the loop; a firm knot is then formed, which can be made still more secure by crossing from right to left, and passing the end in the left hand through, and then draw down once." For fear we should not succeed in the notoriously difficult task of clearly describing a knot, unaided by diagrams, we have thought it best to give the author's own words, that the reader may judge for himself. If our own efforts to understand this knot are crowned with success, we shall think the hair suture, from its flexibility and imperishable nature, worthy of a trial.

Dr. Darby gives the history of twenty cases as samples of those in which he has successfully used hair as a suture and ligature. For the latter purpose the requisite strength is obtained by twisting and agglutinating several hairs together. Dr. Darby prefers hair taken from the tails of horses to that from the tails of mares, as uninjured by urinary saturation, and advises that it should be first steeped in a solution of carbolic acid.

Notwithstanding the defects indicated above, the paper may be regarded as evidence of a praiseworthy desire to add to the resources of surgery in the treatment of wounds.

BOOKS AND PAMPHLETS RECEIVED.

A Practical Treatise on the Diseases of Infancy and Childhood. By Thomas Hawkes Tanner, M.D., F.L.S., etc. Third American Edition, from the last London Edition. Revised and Enlarged by Alfred Meadows, M.D., London. 8vo, pp. 559. Philadelphia, Lindsay & Blakiston, 1871.

The Principles of Psychology. Part I.—The Data of Psychology. By Herbert Spencer. 8vo, pp. 142. New York, D. Appleton & Co., 1869.

TRANSACTIONS OF SOCIETIES.

REPORT OF THE PROCEEDINGS OF THE PATHOLOGICAL SOCIETY OF PHILADELPHIA.

AT a stated meeting of the Pathological Society, held May 11, 1871, John Ashhurst, Jr., M.D., in the chair,

DR. C. T. HUNTER exhibited a specimen of *myxoma of the arm*, with the following history:

Jane S., æt. 60, single, a native of Ireland, applied at the surgical clinic of the University of Pennsylvania, May 3, 1871. She stated that she had always enjoyed very good health, and that her family was free from any constitutional disease. Her attention was first attracted about two years ago to a small tumor, about the size of a hazel-nut, situated two or three inches above the right elbow and on the outer aspect of the arm. For a year and a half its growth was very slow, but during the last six months it had increased quite rapidly in size. She had never suffered any inconvenience from it.

When examined by Dr. Agnew, it was about the size of a large orange. It was movable, and severe handling caused no pain. The overlying integument was not adherent to the tumor, but it was somewhat discolored from abnormal enlargement of its capillaries. The axillary glands were not involved. Dr. Agnew, on dividing the integuments, found the tumor situated in the superficial fascia, and surrounded by a well-defined cyst-wall which had become adherent to the deep fascia. The cephalic vein as it ran along the under surface of the tumor was divided by the operation; the external cutaneous nerve was separated from the tumor by careful dissection. Both ends of the divided vein were secured by two acupressure pins; only one small artery required a ligature. The pins were removed at the expiration of forty-eight hours, and the case is rapidly progressing towards recovery.

Dr. Hunter also read the report of the *microscopic examination of the tumor* by Dr. W. F. Jenks:—

"The portion of the tumor presented to me for examination consisted externally of a white, dense, fibrous membrane, or capsule, from which larger and smaller prolongations were thrown out into the interior of the growth, which was gelatinous in structure, of a transparent grayish color, and finely sprinkled with minute yellowish patches. Other parts were of a deep rosy color, evidently due to the great vascularity of the tissue in these parts. Under the microscope, the irregular network could be seen formed by delicate bundles of connective tissue and elastic fibres, which divided in all directions, forming imperfectly closed spaces in which were lying polymorphous cells,—round, star-shaped, and spindle-shaped,—separated from one another by a large amount of intercellular substance which was precipitated by acetic acid,—the whole forming the so-called myxomatous or mucous tissue. In places, these cells had undergone fatty degeneration, giving rise to the yellowish patches visible to the naked eye."

DR. W. F. NORRIS remarked that myxomatous or jelly-like connective tissue exists normally in the adult only in the vitreous humor, but is present in the fœtus in the Whartonian jelly of the umbilical cord and in the subcutaneous connective tissue.

Tumors presenting this structure are most frequently developed in the connective tissue beneath the skin and between the muscles. A favorite seat is in the subcutaneous connective tissue of the thigh. They are, however, not infrequent in the course of the nerves and arteries. Moreover, the polypoid growths of the nares, external auditory meatus, and uterus often exhibit the same structure.

DR. W. W. KEEN presented a specimen of *necrosed petrous portion of the temporal bone*. A history of the case in which it occurred will be found in the "Hospital Notes" of the present number of this journal.

DR. W. PEPPER presented specimens illustrating *disease of the aortic valves, hypertrophy of the heart and Bright's disease of the kidneys*, terminating in *sudden death from enormous development of gas following the ingestion of bean tea*.

W. B., æt. 43, a liquor-dealer by occupation, and of intemperate habits, had been subject to palpitation of the heart on exertion for several years, and for three years to shortness of breath and to frequent micturition. In December, 1870, œdema of the ankles appeared and rapidly increased, becoming associated with ascites in January, 1871. This soon increased to a great extent, and when first seen, about March 15, there were orthopnœa, pulmonary congestion, enormous ascites, and general anasarca, with free escape of serum through numerous ruptures in the derm over the legs and feet; the heart's rate was 96 to 104 per minute, with manifest hypertrophy of the ventricle and a soft, faint, systolic blowing murmur. The urine was rather scanty, very highly albuminous, and deposited numerous tube-casts, hyaline and granular.

Under the use of a pill of nitrate of potassa, squill, and digitalis, he improved markedly, with diminution of œdema and ascites, and relief to the pulmonary engorgement. On April 25 he obtained some beans, dried with the pods, and had a large amount of them boiled in two quarts of water down to one quart. This he drank in the course of a few hours, and soon afterwards became intensely oppressed with great distention of the abdomen, and died the same afternoon at five o'clock.

An autopsy on the following day revealed enormous tympanitic distention of the stomach and intestines, the tension of the abdominal walls being so great that when an opening was made in them a jet of the ascitic fluid was forced several feet into the air and continued for some minutes. The diaphragm was strongly forced upwards. The heart was greatly hypertrophied, especially in the left ventricle. There was extensive disease of the aortic valves, two of the leaflets being fused together and separated at the line of junction from the wall of the aorta. A large irregular calcareous mass sprang from the point of original attachment. A second calcareous nodule was found on the ventricular face of the third leaflet, so close to its base of attachment as to be much out of the blood-current. Still the lesion appeared remarkably great as compared with the feeble, soft, basic murmur heard during life. The arch of the aorta was moderately atheromatous. The liver was slightly cirrhotic and presented nutmeg congestion. The kidneys were hard, rather reduced in size, their capsule thickened and adherent, the cortex coarse and granular. Several small cysts and old embolic patches were found in them. While there is little doubt that the cardiac lesion was primary, it is probable that the renal disease was not merely a sequel, but a distinct Bright's disease supervening in the course of a latent disease of the aortic valves. The sudden death from pressure upwards of the enormously distended stomach and bowels upon the already laboring heart and lungs is an interesting and instructive clinical fact.

DR. H. ALLEN presented a specimen of *waxy liver with enlarged lobus Spigelii and fatty kidneys*, from a *syphilitic subject*, with the following history:

C. B., female, aged 26 years, single, intemperate, was admitted to the Philadelphia Hospital, December 27, 1866, with primary syphilis. Inguinal adenitis followed. By January 1, 1868, an eruption—the character of which is undetermined—had appeared; judging from the scars upon the body, it was probably of the pustulo-crustaceous type. When first seen by him, in October, 1870, the patient presented that profound anæmia so frequent in syphilis, was emaciated, and, from the ravages of alopecia, loss of incisor teeth, and general malaise, appeared to be older than she really was.

She suffered from attacks of diarrhœa, accompanied with tenesmus. Occasionally micturition was difficult. Both these latter symptoms could be explained by the condition of the lower bowel, which was ulcerated. There was, however, no stricture. The stomach was exceedingly irritable. She was supported during the last year of her life almost entirely on fluids, reliance being placed upon milk, with or without brandy. At times everything would be rejected and medication have but tardy effect in correcting the vomiting. During the past year these attacks of obstinate emesis frequently recurred. She suffered almost constantly from hemicrania and general osteocopic pains. There were no paralysis and no sequelæ of iritis or sore throat. She died exhausted, during one of her attacks of vomiting, May 8, 1871.

Autopsy twenty-four hours after death. Rigor mortis present. The *lungs* were healthy, except at the anterior central portion of the upper lobe of the left side, in which was noted an indurated condition, more particularly at the anterior free border of the lobe, immediately above the interlobular

sulcus. Upon section the deposit was dull white in color,—was friable, and slowly sank in water.

Heart weighed eight ounces; normal.

Liver much enlarged; extended entirely across the abdomen; measured 12 inches from right to left, 7½ inches in greatest antero-posterior diameter, and 4½ inches through longitudinal fissure. Weight, 5 pounds 10 ounces. Texture firm, waxy, without nodules, indurations, or deposits. An interesting feature was observed upon its under surface. The *lobus Spigelii* was disproportionately enlarged and protruded forward. Instead of terminating at the edge of the transverse fissure, it passed over and beyond this line, so as apparently to compress the structures passing to and from the liver through the fissure. The portal vein was filled with a soft clot up to the point of contact with this lobe. Beyond and towards the liver the vessel was empty.

Spleen measured 5 inches by 3 inches, was of a dark purplish-red color, weighed 8 ounces, and was adherent to the diaphragm in great part. It was unusually firm, and without deposit.

Supra-renal capsules.—Right measured 2½ inches by 2 inches; left, 2½ inches by 1 inch; both were firm, without abnormality, beyond the difference in size.

Kidneys.—Left measured 5 inches by 2½ inches, and weighed 7½ ounces; right, 5 inches by 2 inches, and weighed 6½ ounces. Both were flabby, pale, and far advanced in fatty degeneration. The condition of the alimentary canal was normal, beyond a decided engagement of flatus in the cœcal end of the duodenum. The mucous lining of the great bowel was, unfortunately, not examined.

The skull-cap was thickened, and exhibited over the left frontal eminence a patch of recent hyperostosis of the size of a penny.

BIOLOGICAL AND MICROSCOPICAL SECTION OF THE ACADEMY OF NATURAL SCIENCES.

AT a stated meeting, held May 1, 1871, W. S. W. Ruschenberger, M.D., in the chair,

DR. JAMES TYSON called the attention of the section to a saturated solution of acetate of potash as a preservative fluid for microscopic preparations of animal and vegetable tissues. It seems to have been first used by Doppel, and has been highly recommended by Max Schultze in his *Archiv für Mikroskopische Anatomie* for January, 1871. This fluid is said by Max Schultze to have all the advantages of glycerine, with none of its disadvantages. For a detailed account of the advantages, the members of the section were referred to an abstract of Max Schultze's paper in the number of *The Medical Times* for May 15. Not the least of them are the possibility of permanently mounting specimens without the primary use of a cell, and the length of time for which a specimen thus mounted will keep without the necessity of even a ring of cement around it.

Dr. T. had not yet made extensive use of this solution, but the authority recommending it was so high, and its use attended with so little inconvenience, that he had commenced its use, and wished to direct the attention of others to it. The constant advantage of the use of acetic acid in ordinary microscopic manipulation, and the increased utility of glycerine when containing acetic acid in the proportion of five or ten drops to the ounce, are well known; the effects of this important reagent are of course secured in this new solution of acetate of potash.

In the paper alluded to, no directions were given as to the best method of making the solution. For his own use he had saturated strong acetic acid with carbonate of soda. He did not know whether this would prove the most desirable method of making the solution, but proposed giving it a trial. He would present as early as possible the result of his experience.

DR. LEHMAN WELLS remarked that he supposed the absence of any tendency to crystallize around the margin of the thin glass cover, alluded to by Dr. Tyson, was to be explained by the deliquescent nature of acetate of potash.

DR. J. G. RICHARDSON observed that so marked was this deliquescent tendency that he thought a simple and certain method of obtaining the saturated solution was merely to expose the dry salt to a moist atmosphere, from which sufficient water would be absorbed in a short time to dissolve it. Acetate of potash appears in commerce in the form of granular masses, and never in a crystallized state.

GLEANINGS FROM OUR EXCHANGES.

CONTRIBUTIONS TO THE PATHOLOGY AND THERAPEUTICS OF DIABETES.—A. Dupré, Ph.D., Lecturer on Chemistry at Westminster Hospital, London, publishes in *The Practitioner* for February, 1871, some observations upon a young man who had suffered with diabetes for six months. It was found that the administration of three to eight ounces of honey was followed by a gradual diminution of urea from sixty-eight grains to fifty-six grains in twenty-four hours, on the two days preceding the honey diet, to twenty-four grains on the last day of the honey diet. The day after the honey was discontinued the urea went up to forty grains, though the patient took exactly the same diet, and was kept as nearly as possible under the same conditions. These results were confirmatory of former observations on the same patient.

Again, in the case of this patient, small variations in the amount of work performed, had a marked effect on the amount of urea excreted, increasing it. This fact is interesting in connection with the recent observations of Dr. Flint, Jr., on the urine of Weston the pedestrian (in which this older view was reconfirmed), and their subsequent criticism by the editor of *The Practitioner*, Dr. Anstie. Dupré's observations also showed an increase of urea with increased ingestion of food.

The chemical and analytical reasons which seem to the writer to point to the conclusion that the sugar found in the urine of diabetic patients has not been present as such in the blood, but is produced only by its passage through the kidneys, are thus recapitulated: 1. The oxidising power of the system for fruit-sugar is unimpaired, and as this sugar is certainly not more easily oxidizable than grape-sugar, the same may be assumed as true with regard to the latter. 2. The amount of sugar found in the blood of diabetic patients, both by Lehmann and the writer, is apparently insufficient to account for the great quantities of sugar contained in the urine of such patients. 3. The addition of even a moderate amount of honey to the diet of diabetic patients causes a marked diminution in the amount of urea discharged, and this fact seems difficult to reconcile with the notion that the large quantity of sugar found in the urine of these patients had previously existed in the blood.

INFLUENCE OF THE SYMPATHETIC UPON THE ORGANS OF THE FACE.—Dr. Sinitzin (*Centralblatt für die Medicinischen Wissenschaften*, March 18) has found that increase of the temperature of the eyeball, together with hyperæmia of its fundus, are among the commonest of the phenomena following removal of the upper cervical ganglia. The cornea of the eye on the side operated upon will also be found to possess a greater power of resisting the irritation of foreign bodies than that of the other eye. The paralytic phenomena usually observed in the eye after section of the trigeminal nerve within the cranium and in front of the Gasserian ganglion do not take place if the upper cervical ganglion be removed either before or immediately after this operation; and in some cases in which the paralytic phenomena have actually occurred, if they have not advanced to any great extent, and the surface of the cornea still continues to be moist and has not lost its brilliancy, no trace of the results of the section of the trigeminal will be observed after the lapse of a few days, and in other cases the changes in the eyeball will be arrested. The removal of the upper cervical ganglion will be followed by the cicatrization of the ulceration of the lips and eyelids to which section of the fifth nerve generally gives rise, and will also prevent the diminution of the temperature which takes place on the side of the head and face opposite to the section.

THE FUNCTION OF THE INTERCOSTAL MUSCLES.—In *The Medical Times and Gazette* for March 11, 1871, is an editorial

notice of a lecture "*On Localized Electrization of Muscles*," by Dr. Duchenne, of Boulogne, delivered, by request, at St. Thomas's Hospital, London. Most anatomists are of the opinion that the external intercostal muscles are inspiratory muscles. The relative action of these muscles has always been a matter of controversy, some anatomists, as Haller, considering that the two muscles have a common action in the direction of the diagonal between them. Others consider the intercostals as depressors of the ribs. Cruveilhier thought that the intercostals were not essential agents in elevating or depressing the ribs, but considered that they rendered tense the intercostal spaces. Dr. Duchenne considers both internal and external intercostals to be inspiratory muscles. He exhibited photographs of cases of muscular atrophy bearing upon the subject, showing the result of loss of power in the intercostals in one case, and of atrophy of the diaphragm in another.

The Glycogenic Function of the Liver.—Dr. James Tyson, in an introductory lecture on "The Glycogenic Function of the Liver," to the class of the Pennsylvania College of Dental Surgery (*Dental Times*, April, 1871), repeated the experiments usually performed in the demonstration of this subject. He showed the presence of sugar in the dead liver of dogs, *i.e.* in the liver of animals some time dead. He demonstrated, also, the absence of sugar in the blood going to the liver in the portal vein, and its presence in the blood passing from that organ in the hepatic vein. Finally, the absence of sugar from the liver as it exists in the living state was also shown.

From these facts he concluded that the original proposition of Bernard, that the liver is a sugar-forming organ during life, is correct, and accounted for the absence of sugar from the living organ, as demonstrated by Schiff, Pavy, Meissner, Jaeger, and McDonnell, by the fact proven by Prof. Austin Flint, Jr., that the sugar is washed away as fast as it is produced, by the blood of the hepatic vein.

Dr. Tyson also cited the recent experiments of Prof. W. T. Lusk, of New York City (*New York Medical Journal*, July, 1870), as further confirming this view. Dr. Lusk removed blood by catheterization from the right side of the heart and from the jugular vein, and, by titration with carefully diluted Fehling's copper solution, proved that the quantity of sugar in the former was from two to four times greater than that found under corresponding circumstances in the latter; whence he justly concluded that there was a by no means insignificant amount of sugar in the pure hepatic blood before it became largely diluted with the comparatively non-saccharine fluids of the venæ cavæ, and thence that the liver "is certainly, under normal conditions, the principal source of sugar in the economy."

Albuminuric Retinitis.—In the *Edinburgh Medical Journal*, January, 1871, Dr. D. Argyll Robertson directs attention to the combination of Bright's disease and organic changes in the retina. Dimness of vision, so frequently a concomitant of chronic Bright's disease, and which, until very recently, has been invariably ascribed to uræmic poisoning of the nervous system, is now, with few exceptions, attributed to organic disease of the retina, namely, fatty degeneration. In 1850, Türk noticed the coexistence of Bright's disease and fatty degeneration of the retina. Later (1856), Heymann, of Dresden, described "a peculiar variety of inflammation of the retina, followed by, or accompanied with, fatty degeneration of that structure, and associated with Bright's disease." Since then, the subject has been carefully studied by numerous observers, and the retinal lesion has been definitely determined.

"As regards the exact tissue of the retina in which the degeneration occurs, a considerable diversity of opinion has prevailed, but most have observed the change primarily affecting the outer and inner layer of granules, while Nagel and Schweigger also found the connective tissue of the retina, the fibres of Müller, similarly affected. In addition, a thickened sclerosed condition of the optic nerve fibres was noticed by some observers." The retinal affection is most frequently associated with the cirrhotic variety of Bright's disease.

Elephantiasis Arabum.—Dr. Ingraham, of Kennedy, N. Y., reports with illustrations (*Buffalo Med. and Surg. Journal*, January, 1871, p. 225) an interesting case of this disease. A man thirty-two years of age, of healthy parentage, by occupation a lumberman, and thereby considerably exposed, had always enjoyed good health until 1858, when his left leg commenced to enlarge. Since then, excepting for a short period, it has gradually increased in size, until, at the present time, it has attained remarkable dimensions. The measurements of the limb at different points are fifty-nine, twenty-nine, thirty-six, and thirty inches; of the instep and foot, twenty-two and sixteen inches respectively. The nates and left half of the scrotum preserve their natural size. The cuticle of the upper part of the thigh is thickened, but is not scaly, nor is it of darker color than natural. From above downward, the skin gradually becomes harder, scaly, and of darker color than is normal, so that the skin of the foot very closely resembles that of the elephant. Prior to the enlargement of the limb the man weighed from 135 to 140 pounds; his weight is now from 280 to 300 pounds.

Idiopathic Tetanus successfully treated by Bromide of Potassium and Calabar Bean.—Mr. Allen Coutts gives in *The Practitioner* for April, 1871, the results of the treatment of a case of idiopathic tetanus by these two remedies. The amount of the extract of the physostigma venenosum was very small, only one-third of a grain every two hours, and Mr. Coutts is, therefore, disposed to attribute the fortunate result of the case to the administration, at the same time, of bromide of potassium, in consequence of its power to lessen the reflex excitability of the medulla oblongata and the nervous centres in general. Moreover, no depression was produced, which we have always to fear in administering large doses of calabar bean.

On the Action of Aconitum Napellus.—In the same journal we find a paper on the action of this drug, by C. D. Phillips, M.D. According to this gentleman, aconite is always indicated in the early stage of simple inflammatory fevers, where as yet but little organic change has taken place, as in the early stage of pneumonia and most acute congestions. It is claimed for it that it not only lowers the frequency of the heart's action, but brings the temperature to its normal standard. After having done this, however, it is of no further use. In nine unselected cases of pneumonia the result of treatment was as follows:—"In none of them did the fever last longer than six days, and in five of them it left in about forty-eight hours, reckoning from the rigors; and in all these cases, in from three to six days after the temperature had fallen to 99°, or below it, the lungs became quite normal." Aconite will also be found useful in the treatment of tonsillitis, of simple cardiac hypertrophy without valvular disease, of puerperal fever, of erysipelas, of dysentery, and of dysenteric diarrhœa.

Croup and Diphtheria.—In a communication in the February number of *Virchow's Archives*, Dr. Franz Hartman advocates the view that croup and diphtheria are not distinct diseases, but different grades of one and the same process. As is well known, modifications are impressed upon disease by the tissue or organ it affects and by its duration, and by keeping this in mind some of the points of difference presented by croup and diphtheria may be readily explained. In both conditions there is an exudative process, and the exudation must be furnished by the vessels,—the lymphatics as well as the blood-vessels. Dr. Hartman has demonstrated that the capillaries are not the terminations of the blood-vessels, but that the latter are united with small ducts which carry nutrition to the elements of the tissues. These little ducts, under ordinary circumstances, do not admit the blood-corpuscles, but may, when irritated, expand sufficiently to do so. The lymphatics do not extend to the epithelium of the mucous membranes, but terminate in follicles opening on the free surface and communicating with one another. The lymphatics are, moreover, connected with the blood-vessels by means of the vasa serosa, which are formed by the connective tissue corpuscles and their prolongations.

The anatomical construction of the mucous membrane allows, therefore, the exudation of plasma upon the outer surface, and this is prevented only by the fact that under normal conditions no more fluid is furnished by the capillaries than can be taken up by the lymphatics. Upon the occurrence of inflammation this ceases to be the case, for not only is there

an increase in the amount brought, but the lymphatics are able to absorb less, in consequence of the compression which they suffer. We therefore have an exudation in every inflammation of the mucous membrane, but it will depend upon circumstances whether this appears upon the surface. The looser the texture of the mucous membrane affected, the more likely is the exudation to be retained in its interior. If the mucous membrane be adherent to muscles which are in constant action, the exudation will be forced to the surface by the contraction of these. A greater intensity of the inflammation will, however, paralyze the muscles, and there will, therefore, be under these circumstances a retention of the exudation within the membrane.

Croup, therefore, indicates the existence of inflammation not so severe as that which gives rise to diphtheria, and affects more frequently the larynx than the pharynx, because the mucous membrane of the latter is of much looser texture than that of the former. Diphtheritic patches are, on the other hand, most frequently found where the texture is loose, or where there is little movement, as, for instance, the tonsils or upper part of the pharynx. It is not uncommon to have diphtheria supervening upon croup: this is owing either to the violence of the inflammation paralyzing the muscles, or to the fact that the exudation which has coagulated upon the membrane prevents any further exudation. Dr. Hartman believes that the exudation which is retained within the membrane continues in a liquid condition, and solidifies only upon contact with the atmosphere.

The Formation of Pus.—In the same paper Dr. Hartman gives his views in regard to the formation of pus. The pus cell he believes to be identical with the white blood cell and with the lymph cell, and, like these, to be formed from the elements of the lymph and chyle. "I believe," he says, "that pus cells are only white blood or lymph cells, but that they do not come out of the circulation, but are developed where they are found, at the seat of the inflammation." Inflammation gives rise to an arrest of the circulation in the beginning of the lymphatics, in the vasa serosa, in the connective tissue cells, and even in the capillaries. This it is which gives rise to the inflammatory swelling. A development of lymph cells (pus cells) now takes place in the stagnating lymph contained in the lymphatics, and also in the connective tissue cells; finally the latter burst, and the fully-formed and immature pus cells are extravasated. This is the process of the formation of pus as it is observed in the connective tissue cells.

Case of Congenital Lymphatic Varix.—Dr. Robert Patterson reports in the May number of the *Edinburgh Medical Journal* a case of this rare disease. The part affected was the right leg. This limb was at least twice the size of the left one; had a slight purple tint all over, with here and there, on the most prominent parts, a bluish tinge. The whole limb from Poupart's ligament in front, and around by the crest of the ilium behind, down to the toes of the foot, was one mass of twisted and contorted varices. The general appearance which the limb exhibited may be likened to that of a very bad case of varicose veins of the leg in an adult, but the vermicular prominences rolled, as it were, round and round the leg in a singular manner. The child had perfect use of the limb, but did not move it much unless it was handled, which was evidently painful to it. The child lived only eight days, its death no doubt being hastened by an abundant transpiration of fluid from the limb, which continued during the whole of its life.

The autopsy showed that the varicose prominences were enlarged lymphatic vessels, filled to distention with a milky fluid.

Calabar Bean.—Mr. Albert E. Ebert touches the secret of the very common failure of the extract of calabar bean in practice when he states (*Pharmacist*, December, 1870) that the bean necessary for the production of an ounce costs $4.00, besides the alcohol for menstruum and the labor required,—and yet the commercial quotation of the extract is only $1.25 per ounce.

Keloid Tumors.—Dr. Tilbury Fox (*Lancet*, December 17, 1870) exhibited before the Pathological Society of London three specimens of these tumors, sent him by Dr. Anderson, of Jamaica, which had grown from the tubules of ears pierced for ear-rings. These outgrowths are common in Jamaica.

MISCELLANY.

Committee of Arrangements of the American Medical Association.—The committee appointed at the last meeting of the American Medical Association to make the necessary arrangements for its next meeting consists of Dr. E. Hartshorne, Chairman, Drs. S. W. Gross, D. Murray Cheston, F. F. Maury, James Tyson, S. W. Mitchell, John H. Packard, William Pepper, and R. M. Townsend, all of this city.

Meteorological.—The mean temperature of the month of May, as shown by the record kept at the Pennsylvania Hospital, was 66°.26, which is unusually high. The highest temperature observed during the month was 91°.5, on the 30th. The lowest was 48°, on the 8th. The average of the daily maximum temperature was 73°.83; that of the daily minimum temperature, 58°.69. According to the *Public Ledger*, the average of the mean temperature of the month of May since 1790 has been 62°.69. The highest mean temperature on record for May was 71°, in 1802, and again in 1826, the lowest being 51°.75, in 1848. On only three days during the past month did the thermometer fail to exceed the average mean temperature of the month.

The quantity of rain which fell during May was 3.383 inches, most of it (1.84 inches) occurring on the 5th. The mean rain-fall of the month for the past thirty-four years has been 4.45 inches.

A Family of Suicides.—At the inquest of the body of a man who committed suicide recently in St. Louis, the fact was developed that he had attempted to hang himself five months before, but was cut down by his wife, and that he was the last of a family of six brothers and sisters, all of whom had died by their own hands.

Appointments and Resignation.—Mr. Paget's numerous admirers in this country will be sorry to learn that he has felt himself obliged to resign his position at St. Bartholomew's Hospital, London, in consequence of debility left by his recent severe illness.

It is said that Mr. Callender will succeed to the vacancy thus created in the senior staff, and that Mr. Morrant Baker will be elected Assistant-Surgeon in that gentleman's place.

The Staff of Guy's Hospital has been recently increased by the appointment of Dr. Pavy as Physician. Dr. Pye-Smith was elected to fill the vacancy created by the promotion of Dr. Pavy.

Prof. Bamberger, of Würzburg, has been chosen as the successor of the late Prof. Oppolzer in the Professorship of Clinical Medicine in the University of Vienna, and it is said will assume the duties of the position early in the autumn.

Mortality from Smallpox in the Vaccinated.—A late number of the *British Medical Journal* contains some interesting statistics of the recent epidemic of smallpox in England. The mortality among vaccinated persons was so great that the confidence in the protective power of vaccination has been very much shaken. Dr. Seaton shows, however, that the mortality was decidedly greater among the unvaccinated. During the present epidemic, he says, the proportion of deaths to attacks among the vaccinated has mounted from below seven to fully nine per cent.; but the rate of deaths among the unvaccinated has mounted from thirty-five to forty-nine per cent. The difference between the death-rate of seven and of nine per cent. is due not to a

falling off in the prophylactic power of vaccination, but to the greater intensity of the variolous influence.

NEW CURE FOR RHEUMATISM.—We take the following from the *New York Tribune:*

"We wonder how many infallible 'cures' there are for 'rheumatism,' just as we wonder how many diseases there are called 'rheumatism' because the doctors can think of no other name for them. The last treatment for this mysterious complaint is to give the patient a teaspoonful of salt and water, and then to place a pinch of salt in each of his stockings. As no medicine is good for anything which will not overthrow at least two entirely different diseases, we are happy to announce that the salt and water and the salt in the stockings have been found equally efficacious in cases of fever and ague. The general principle seems to be that if salt will cure meat it will cure anything; and it is about as sensible as a great many medical principles now in vogue."

THE MEDICAL PROFESSION OF PARIS DURING THE PRUSSIAN SIEGE.—A letter from Paris in the *Medical Times and Gazette* for April 22 gives an interesting account of the conduct of the medical profession during the recent siege of that city. On the days on which battles were fought, the whole *personnel* of the hospital was at work, performing the necessary operations. It was from exposure of this kind that M. Cocteau, a young and accomplished surgeon, contracted a pneumonia of which he died. All the hospital surgeons, without exception, had, in addition to their ordinary duties, three or four ambulances to attend to; and when the surgeons were absent, the services of the military hospitals also devolved upon them. Even the veterans—for many years retired from the hospitals—MM. Ricord, Blache, Briguet, Guérard, and others, wished to pay their tribute in these sad circumstances, and give proof of their zeal by placing themselves at the disposal of the ambulances. Dr. Ricord, president of the Ambulance de la Presse, though seventy years old, was present at every engagement, picking up and dressing the wounded under heavy fire.

CONDURANGO.—Some of our exchanges (*Nat. Med. Jour., Medical Gazette, Boston Medical and Surgical Journal*) refer to a recent correspondence between the Minister of the United States to the Republic of Ecuador and the government at Washington in regard to the introduction into this country for medicinal purposes of the wood of a tree called Condurango. It is said that fifty pounds of the wood have been placed at the disposal of the Surgeon-General of the navy for experiment by naval surgeons and other medical men, and it is the expressed wish of the Secretary of State that Mr. Robeson should cause it to be administered by the medical staff of the navy. The diseases in which the drug has been found to act most happily by the physicians of Ecuador are syphilis and cancer,—two diseases not generally thought to be closely allied. One of our contemporaries says:

"Unfortunately, the accounts of cures effected by this drug have been derived in great part from ignorant people, and the word cancer is so loosely used that it is impossible to believe in all the cases in which the patient was so fortunately restored to health under its use that he was affected with malignant disease."

SUED BY A CHINESE PHYSICIAN.—At San Francisco, L. J. Pahi, a Chinese physician, brought suit against a white man to recover the amount of his bill ($250) for professional attendance. The bill was paid before the case came into court, but it was Dr. Pahi's intention, in case the State court should have refused to receive his testimony, to apply to the United States court for a warrant, with a view to testing the right of the State courts to reject the testimony of the Chinese.

MORTALITY OF PHILADELPHIA.—The following reports are condensed from the records at the Health Office:

	For the week ending May 27.	June 3.
Consumption	39	46
Other Diseases of Respiratory Organs	28	34
Diseases of Organs of Circulation	16	28
Diseases of Brain and Nervous System	42	50
Diseases of Abdominal Organs	19	24
Zymotic Diseases	21	41
Debility	18	23
Marasmus	8	14
Old Age	12	6
Cancer	7	4
Scrofula	2	2
Tetanus	0	1
Stillborn	9	15
Malformation	7	13
Intemperance	0	1
Casualties	5	2
Unclassifiable	9	10
Unknown	0	1
Totals	242	315
Adults	143	176
Minors	99	139

OFFICIAL LIST

OF CHANGES OF STATIONS AND DUTIES OF OFFICERS OF THE MEDICAL DEPARTMENT U.S. ARMY, FROM MAY 19, 1871, TO JUNE 4, 1871, INCLUSIVE.

COOPER, GEO. E., SURGEON AND MEDICAL DIRECTOR.—By S. O. 61, Headquarters Department of the Columbia, May 6, 1871, to inspect the affairs of the Medical Department and sanitary condition at Fort Hall, Idaho Territory, and, upon completion of this duty, rejoin his proper station.

CAMPBELL, JOHN, SURGEON.—By S. O. 109, Headquarters Department of Dakota, May 19, 1871, granted leave of absence for 30 days, with permission to apply for an extension of 40 days, to take effect when relieved by another medical officer.

GHISELIN, J. F., SURGEON.—By S. O. 112, Headquarters Department of the East, May 31, 1871, granted leave of absence for 30 days.

BILL, J. H., SURGEON.—By S. O. 61, C.S., Headquarters Department of the Columbia, to take charge of office of Medical Director and perform duties of Attending-Surgeon during Dr. Cooper's absence.

TOWN, F. L., SURGEON.—By S. O. 202, Headquarters of the Army, A. G. O., May 23, 1871, granted leave of absence for three months.

STERNBERG, G. M., ASSISTANT-SURGEON.—By S. O. 110, Headquarters Department of the East, May 26, 1871, assigned to temporary duty at Fort Adams, R.I., during absence of Assistant-Surgeon Waters, U.S.A., and, on return of Dr. Waters, to rejoin his proper station, Fort Hamilton, N.Y. Harbour.

HARTSUFF, A., ASSISTANT-SURGEON.—By par. 1, S. O. 49, Headquarters Department of the Lakes, May 20, 1871, assigned to duty as Attending-Surgeon and Examining-Surgeon of recruits at Detroit, Mich.; and by par. 2, same order, granted leave of absence for 30 days, with permission to apply for an extension of two months.

WOODHULL, ALFRED A., ASSISTANT-SURGEON.—By S. O. 36, Headquarters Military Division of the Missouri, May 22, 1871, granted an extension of his leave of absence for 30 days.

MCELDERRY, H., ASSISTANT-SURGEON.—By S. O. 100, Headquarters Department of Texas, May 20, 1871, relieved at Fort McIntosh, Texas, and to report in person to the Medical Director at San Antonio, Texas.

MACKIN, CHAS., ASSISTANT-SURGEON.—By S. O. 87, Headquarters Department of the Platte, May 22, 1871, assigned to duty with troops on the Republican River.

MEACHAM, FRANK, ASSISTANT-SURGEON.—By S. O. 92, Headquarters Department of the Platte, May 27, 1871, granted leave of absence for 30 days.

DE WITT, CALVIN, ASSISTANT-SURGEON.—By S. O. 22, Headquarters Department of Arizona, March 15, 1871, assigned to duty at Fort Whipple, Arizona Territory. (April 30, at Camp McDowell, A. T., awaiting transportation.)

GIRARD, JOS. B., ASSISTANT-SURGEON.—By S. O 202, War Department A.G.O., May 31, 1871, relieved from duty in the Department of the Platte, and granted leave of absence for four months, with permission to go beyond the sea.

WILSON, A. D., ASSISTANT-SURGEON.—By S. O. 90, Headquarters Department of the Platte, May 25, 1871, assigned to temporary duty at Camp Douglas, U. T.